

BrightStorTM CA-ASM2[®] Backup and Recovery

ISPF User Interface Guide

4.2



Computer AssociatesTM

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Contents

Chapter 1. Introduction	1-1
1.1 Summary of New Features for Version 4.2	1-2
1.1.1 9999 Files Tape Support	1-2
1.1.2 SMS Support Enhancements	1-2
1.1.3 ISPF Interface Enhancements	1-2
1.1.4 IXR Enhancements	1-2
1.1.5 CA-ASM2 Workstation	1-3
1.1.6 \$DASDMNT	1-3
1.2 Documentation Changes	1-4
1.2.1 Removed	1-4
 Chapter 2. CA-ASM2 Primary Selection Menu	 2-1
2.1 ISPF Support	2-2
2.2 Using CA-ASM2 in ISPF Mode	2-3
2.2.1 Accessing CA-ASM2	2-3
2.3 Dialog Parameters (Option 0)	2-4
2.3.1 Option Descriptions	2-4
2.4 Archive Utility (Option 1)	2-6
2.4.1 Archiving	2-6
2.4.2 Types of Archive	2-7
2.4.3 System-Initiated Archiving	2-7
2.4.4 User-Initiated Archiving	2-7
2.4.5 Queuing Data Sets to be Archived/Restored	2-7
2.4.6 Operands	2-8
2.4.6.1 Archive Parameters	2-8
2.4.6.2 Reload Parameters	2-9
2.5 Backup Utility (Option 2)	2-10
2.5.1 Backup	2-10
2.5.2 System-Initiated Incremental Backup	2-11
2.5.3 User-Initiated Backup	2-11
2.5.4 Queuing Data Sets to be Backed-Up/Restored	2-11
2.5.5 Operands	2-11
2.5.5.1 Backup Parameters	2-12
2.5.5.2 Reload Parameters	2-12
2.6 Disk Space Management Utility (Option 3)	2-13
2.6.1 Space Management	2-13
2.6.2 Displaying Disk Data Set Information	2-13
2.6.3 Displaying Disk Usage Data Set Information	2-14
2.6.4 Compressing Partitioned Data Sets	2-15

2.6.5	Releasing Unused Space	2-17
2.6.6	Resetting End-of-File on Sequential Data Sets	2-17
2.7	Catalog Inquiry or Update (Option 4)	2-18
2.7.1	Operands	2-19
2.7.2	Inquiry Parameters	2-19
2.7.3	Update Parameters	2-20
2.7.4	Delete Parameters	2-20
2.8	Queue Manager (Option 5)	2-21
2.8.1	Operands	2-21
2.8.2	Parameters for Unload Commands (\$AR and \$BK)	2-22
2.8.3	Parameters for Reload Commands (\$RA and \$RB)	2-23
2.9	RSVP (Option 6)	2-24
2.9.1	Building a \$RSVP Command with ISPF Panels	2-33
2.10	Extended Functionality Processing (Option 7)	2-38
2.10.1	Benefits	2-39
2.10.2	ASM2 Restore Selection Menu	2-41
2.11	Catalog Maintenance (Option 8)	2-44
Chapter 3.	Extended ISPF Applications	3-1
3.1	Authority Levels	3-2
3.2	Profile Update (Option 0)	3-4
3.2.1	Panel 1 of 3	3-5
3.2.2	Panel 2 of 3	3-8
3.2.3	Panel 3 of 3	3-9
3.3	Data Set or Mask Restore (Option 1)	3-10
3.4	Multiple Data Sets or Application Restore (Option 2)	3-12
3.4.1	Application Restores	3-12
3.4.2	Application Restore Warning	3-15
3.5	Restoring All Data Sets From a Specific Tape Volser (Option 3)	3-16
3.6	Restoring All Files From a Disk Before/After a Date (Option 4)	3-18
3.7	Restoring All Previous Options Together (Option 5)	3-20
3.8	Data Set Display Panels	3-22
3.8.1	Normal Field Descriptions	3-23
3.9	Application and Special VSAM Definitions (Option A)	3-25
3.9.1	Option A1 - Application Definitions	3-26
3.9.2	Option A2 - VSAM Exceptions Table Definition	3-30
3.10	Full-Volume Restore and Incremental Recovery (Option B)	3-37
3.10.1	Options B1/2/3 Volume Restore/Recovery	3-39
3.10.1.1	Volumes with an Available Full Backup	3-40
3.10.2	Options B4/5 - Incremental Recovery Only	3-44
3.10.3	Option B6 - Tape Optimization	3-47
3.11	Cross-Reference Menu (Option C)	3-49
3.11.1	Options C1/C2	3-50
3.11.2	Option C3	3-51
3.11.3	Options C4/C5/C6	3-51
3.12	Load Alternate/Recheck User Options and Security (Option D)	3-52
3.13	Backup, Recovery and Reporting (Option E)	3-53
3.13.1	Option E0 - IPC Job Parameters	3-54
3.13.2	Option E1 : Backup IPC and Journal	3-55
3.13.3	Option E2 - Restore IPC with REPRO	3-56
3.13.4	Option E3 - Restore IPC with IMPORT	3-56

3.13.5	Option E4 - Restore and Recover IPC from Version 0	3-56
3.13.6	Option E5 : Restore and Recover IPC from Version -1	3-56
3.13.7	Option E6 - Journal Allocation and Initialization	3-56
3.13.8	Option E7: IPC Reorganization	3-57
3.13.9	Option EA - CA-ASM2 Maintenance	3-58
3.13.9.1	Tape Check Output: LOXXX Check	3-61
3.13.9.2	Tape Check Output: General Results	3-62
3.13.9.3	Tape Check Output: Test 1	3-63
3.13.9.4	Tape Check Output: Test 2	3-63
3.13.9.5	Tape Check Output: Test 3	3-64
3.13.9.6	Tape Check Output: Test 4	3-64
3.13.9.7	Tape Check Output: Test 5	3-65
3.13.9.8	Tape Check Output: Test 6	3-65
3.13.10	Option EB - RSVP Sample Panels	3-65
3.13.11	Option EF - Forward-Merge Selection	3-65
3.13.12	Option EM - Member Backup	3-68
3.13.13	Option ES - IPC Statistics	3-70
3.14	Customization Values (Option F)	3-71
3.15	Volume Space Map (Option G)	3-73
3.15.1	Online Volume List	3-74
3.15.2	Online Volumes Space Map	3-75
Chapter 4.	Catalog Maintenance	4-1
4.1	Viewing a VSAM Cluster with Alternate Indexes	4-3
4.1.1	Selecting the Base Cluster	4-3
4.1.2	Selecting the Desired Unload Version	4-4
4.1.3	Base Cluster's Cell List	4-5
4.1.4	Base Cluster's ASO Cell	4-6
4.1.5	Base Cluster's UDC Cell (Data Sets Created Prior to Version 4.1)	4-7
4.1.6	Base Cluster's UDC Cell (Data Sets Created with Version 4.1 or Later)	4-8
4.1.7	Base Cluster's UPC Cell (1 of 2)	4-9
4.1.8	Base Cluster's UPC Cell (2 of 2)	4-10
4.1.9	Base Cluster's UVC Subcell List	4-11
4.1.10	Base Cluster's UVC Volume Subcell	4-12
4.2	Viewing a VSAM Alternate Index	4-13
4.2.1	Selecting the Alternate Index	4-13
4.2.2	Selecting the Desired Unload Version	4-14
4.2.3	Alternate Index's Cell List	4-15
4.2.4	Alternate Index's ASO Cell	4-16
4.2.5	Alternate Index's UDC Cell (Data Sets Created Prior to Version 4.1)	4-17
4.2.6	Alternate Index's UDC Cell (Data Sets Created With Version 4.1 or Later)	4-18
4.2.7	Alternate Index's UPC Cell (1 of 2)	4-19
4.2.8	Alternate Index's UPC Cell (2 of 2)	4-20
4.2.9	Alternate Index's UVC Subcell List	4-21
4.2.10	Alternate Index's UVC Volume Subcell	4-22
4.3	Viewing a Sequential Data Set with Tape and Disk Copies	4-23
4.3.1	Selecting the Sequential Data Set to View	4-23
4.3.2	Selecting the Desired Unload Version	4-24
4.3.3	Viewing the Unload Record Cell List	4-25

4.3.4	Selecting a Copy of the Data Set	4-26
4.3.5	Viewing Disk Copy Characteristics	4-27
4.3.6	Selecting the Tape Copy of the Data Set	4-28
4.3.7	Viewing Tape Copy Characteristics	4-29
4.4	Accessing \$DEFRAg Volume Records	4-30
4.4.1	Selecting the Disk Volume	4-30
4.4.2	Selecting the Desired \$DEFRAg Volume Unload Version	4-31
4.4.3	Disk Volume's DVB Cell	4-32
4.5	Other IPC Cells	4-33
4.5.1	IXR Cell	4-33
4.5.2	RLD Cell	4-34
4.5.3	SMS Cell	4-35
4.5.4	CA-3 Cell	4-36
4.5.5	CA-6	4-37
4.5.6	Comment Cell	4-38
Chapter 5.	Command Descriptions	5-1
5.1	Line Commands	5-2
5.1.1	B Line Command	5-3
5.1.2	D Line Command	5-3
5.1.3	E Line Command	5-4
5.1.4	G Line Command	5-4
5.1.5	L Line Command	5-5
5.1.6	M Line Command	5-6
5.1.7	P Line Command	5-7
5.1.8	Q Line Command	5-7
5.1.9	R Line Command	5-8
5.1.10	S Line Command	5-9
5.1.11	U Line Command	5-12
5.1.12	X Line Command	5-13
5.2	Mass Commands	5-14
5.2.1	CAN (CANcel)	5-15
5.2.2	COM (COMment display)	5-15
5.2.3	CRI (CRIteria)	5-16
5.2.4	DEL (mass DELeTe from display)	5-17
5.2.5	EXT (EXTended display)	5-18
5.2.6	MDEL (Mass DELeTe)	5-19
5.2.7	MGEN (Mass GENerate)	5-20
5.2.8	MRES (Mass REStore)	5-21
5.2.9	MUPD (Mass UPDate)	5-22
5.2.10	NORM (NORMal display)	5-23
5.2.11	PROF (PROFile update)	5-24
5.2.12	PRT (PRinT)	5-24
5.2.13	SRT (SoRT)	5-25
5.3	Confirmation of Selections	5-26
Chapter 6.	Examples	6-1
6.1	Example 1 - Restoring a File from the Selection List	6-2
6.2	Example 2 - Restoring a File Using Option 3.4	6-7
6.3	Example 3 - Reloading all Files Not Online.	6-12
6.4	Example 4 - Defining an Application	6-16

6.5 Example 5 - Restoring an Application	6-21
6.6 Example 6 - Defining Specific VSAM	6-28
6.7 Example 7 - Restoring a Specific VSAM Data Set	6-33
6.8 Example 8 - Restoring from a Member Backup	6-39
6.9 Example 9 - Full-Volume Restore and Recovery	6-42
 Appendix A. CA-7 Interface	 A-1
 Appendix B. ISPF Table Variables	 B-1
B.1 Key Fields	B-2
B.2 Normal Fields	B-3
 Appendix C. Extended Functions Customization	 C-1
C.1 JOBCARD Parameters	C-2
C.2 IPC Backup GDGs	C-3
C.3 Special Access Table for PROG, PRG1 Users	C-5
C.3.1 Sample Mask Definition	C-5
C.3.2 Using Variables in Access Table	C-6
C.4 CA-7 Fields	C-7
C.5 Additional Security Check	C-8
 Appendix D. ISPF Primary Option Menu	 D-1
D.1 Option 3.4	D-2
D.2 Invoking ISPF from Command Line	D-5
 Index	 X-1

Chapter 1. Introduction

This publication is designed for users of CA-ASM2 who wish to use the ISPF interface to restore data sets that have been archived or backed up rather than using less automated methods.

This guide describes how to use the ISPF User interface (designed for Version 4.2) in detail, providing examples of all available functions and describing each ISPF panel available. ISPF panels formerly described in Appendix A of the *CA-ASM2 System Reference Guide* and Appendix A of the *CA-ASM2 RSVP Reference Guide* are now incorporated in this guide.

Note: Throughout CA-ASM2 documentation RSVP refers to a component of CA-ASM2. \$RSVP refers to a command that runs under the RSVP component.

1.1 Summary of New Features for Version 4.2

Each of the following Version 4.2 enhancements for CA-ASM2 are described in detail in the new set of documentation issued for this version.

1.1.1 9999 Files Tape Support

CA-ASM2 now supports up to 9,999 files on a single CA-ASM2 Archive or Backup tape.

- Allows unload to tape to hold 9999 files
- \$FORMAT automatically updates LOxxx file(s)
- Converts old format LOxxx files to new format

1.1.2 SMS Support Enhancements

The Management Class fields controlling expiration may now optionally be used to control when CA-ASM2 will expire, archive and backup versions. In addition, CA-ASM2 invokes the ACS class selection routines prior to reload to handle situations in which the ACS class selection rules have changed and the data set is assigned to different classes.

- Reload pre-drives ACS routines to determine SMS classes during dynamic allocation
- Uses SMS MGTCLASS for retention values during archives and backups

1.1.3 ISPF Interface Enhancements

The CA-ASM2 ISPF application has been enhanced to provide additional functionality to end users of CA-ASM2. Online panels are provided to perform common functions such as requesting the restore of all data sets for an application through a new Application construct and restoring a volume from a specific point in time. Customization capabilities are built in through the use of a profile, which removes options that are inappropriate for general users.

- Group data sets at the application level
- High-level qualifier masking and wild cards

1.1.4 IXR Enhancements

The temporary name created by IXR to restore a data set now supports the specification of up to three alias levels for non-VSAM data sets and two levels for VSAM data sets.

Also a New RLDTMPNM PARMLIB keyword for data set high-level qualifier usage during reload UCAT processing has been added.

1.1.5 CA-ASM2 Workstation

CA-ASM2 integration with the CA-ASM2 Workstation has been enhanced to provide extensive administration, reporting, and storage management capabilities from a Windows-based graphical user interface. CA-ASM2 Workstation is a separately licensed product.

1.1.6 \$DASDMNT

Support for SMS management class retention of archived data sets has been implemented via the use of a new keyword \$SMSRTPD which can be coded in the SYSIN stream.

1.2 Documentation Changes

- A new document, the *ISPF User Interface Guide* has been added to the documentation set. This document describes all the new extended features developed for Version 4.2. In addition, all ISPF panels that were previously described in Appendix A of the *CA-ASM2 System Reference Guide* and Appendix A of the *CA-ASM2 RSVP User Guide* have been integrated into this document so that a single source can be referenced for all ISPF applications.
- All guides have been updated with relevant Version 4.2 information.
- The syntax throughout the documentation has been given a new look. Information has been provided to assist you in reading the syntax diagrams.
- The Troubleshooting section, found in the *CA-ASM2 System Reference Guide*, now provides information for accessing the Computer Associates home page on the Internet for additional Computer Associates products and services.

1.2.1 Removed

- *CA-ASM2 General Information Guide*. Information located in this guide has been disseminated into the *CA-ASM2 System Reference Guide* and *CA-ASM2 Getting Started*.
- Conversion guides for CA-3 and CA-Dynam/DASD.
- *CA-ASM2 Master Index*.
- Demand Analysis Request (DAR) form. You can now enter your request through StarTCC Extended Support (click on Support at www.ca.com on the Web).

Chapter 2. CA-ASM2 Primary Selection Menu

This chapter provides information on accessing each of the 8 options available from the CA-ASM2 Primary Option menu used to access the various ISPF panels. Detailed information is available for each of the standard ISPF panels (options 0 through 6 on the Primary Selection Menu).

2.1 ISPF Support

If your system has TSO and ISPF/PDF (or another version of SPF), you can use the CA-ASM2 panels under ISPF. This chapter provides information on using the standard ISPF User Interface and explains how to access this interface. Each of the standard ISPF panels (option 0 through 6 on the Primary Selection menu) is described in detail. Options 7 and 8 are overviewed in this chapter and explained in greater detail in subsequent chapters. Option 7 is explained in detail in Chapter 2. Option 8 is explained in detail in Chapter 3.

See the *CA-ASM2 Planning Guide* for detailed information on ISPF support.

CA-ASM2 ISPF panels provide:

- **Online tutorial panels.** Background information on CA-ASM2 and concise descriptions of keywords are quickly accessible from any command panel.
- **Easy access to CA-ASM2 commands and options.** You do not have to remember multilevel command syntax; simply fill in the blanks to construct each command.
- **Swift entry of commands.** The ISPF panels display the same keyword names that CA-ASM2 uses in TSO command mode. If you already know CA-ASM2 command syntax, using the panels is even easier, but if you do not, there is no need to memorize the keyword names. Just enter their values in the blanks provided.
- **Immediate syntax error detection.** The dialog manager checks syntax as soon as you enter a command, for faster response time with fewer errors.
- **Browsable output.** You can review all CA-ASM2 output, such as DASD space management reports, backup and archive IPC inquiries, and CA-RSVP exception reports, by using standard ISPF browse facilities.
- **A Saved Command Table for \$RSVP commands.** You step through a series of parameter entry panels to facilitate building \$RSVP commands, which you can save to a common library and recall for use or modification.

Note: See Appendix D for an alternate way of invoking the ISPF interface.

2.2 Using CA-ASM2 in ISPF Mode

Moves between CA-ASM2 panels are the same as moves between other ISPF panels. If you are familiar with ISPF, it is easy to navigate panels. References to PF keys assume that you are using a TSO terminal with the PF key default definitions.

For more background information on the CA-ASM2 ISPF panels, you can access the CA-ASM2 tutorial panels at any time by pressing PF1.

2.2.1 Accessing CA-ASM2

To access CA-ASM2 panels, follow these steps in sequence:

1. Log on to TSO, and request ISPF. A minimum TSO logon region size of 2048K is recommended when using CA-ASM2 in ISPF mode.
2. Display the ISPF menu that has the CA-ASM2 option.
3. On the command line type the number or letter of the CA-ASM2 option and press Enter. The CA-ASM2 Primary Selection menu displays which provides access to all CA-ASM2 panels.

```
----- CA-ASM2 PRIMARY SELECTION MENU -----  
OPTION ==>  
  
  0  PARMS      - Specify CA-ASM2 dialog parameters.  
  
  1  ARCHIVE    - Archive a data set to tape, or reload an archived data set.  
  
  2  BACKUP     - Backup a data set to tape, or reload a backed up data set.  
  
  3  SPACE      - List disk data set space or usage information.  
    MANAGEMENT  Compress or release unused space from data sets.  
                  Reset end-of-file on a sequential data set.  
  
  4  CATALOG    - Inquire or update the CA-ASM2 catalog.  
  
  5  QUEUE      - Invoke the CA-ASM2 command queue manager.  
  
  6  RSVP       - Report Selection and Variable Processing.  
  
  7  EXTENDED   - Extended Functionality Processing.
```

2.3 Dialog Parameters (Option 0)

The ISPF Dialog Parameters panel is accessed by selecting option 0 on the CA-ASM2 Primary Selection menu. The CA-ASM2 ISPF Dialog Manager allows you to alter the environment of the dialog to suit your own personal requirements.

```

----- CA-ASM2 ISPF DIALOG PARAMETERS -----
COMMAND ==>

Language      ==>      (or blank for English)

  D - Danish    E - Spanish
  F - French    G - German
  I - Italian   S - Swedish

Messages Alarm ==> YES  (YES/NO)

ASM2 Database Administrator ==> NO  (YES/NO)

```

2.3.1 Option Descriptions

Language	Specifies the language to be used in all panels. Some of the languages listed on this panel may not be available at your site.
Messages Alarm	Allows you to control the audible terminal alarm for displayed messages. YES is the default setting and sounds the terminal alarm for messages. NO silences the alarm.
ASM2 Database Administrator	Indicates whether an authorized user (the ASM2 Database Administrator) wants to access the ISPF catalog maintenance panels to display or update a record in the IPC. When YES is entered, option 8, Catalog Maintenance displays on the CA-ASM2 Primary Selection menu as shown on the next page.

This example shows the CA-ASM2 Primary Selection menu with option 8. Option 8 provides access to the catalog maintenance panels (see page 2-44).

```
----- CA-ASM2 PRIMARY SELECTION MENU -----  
OPTION ==>  
  
  0  PARMS      - Specify CA-ASM2 dialog parameters.  
  
  1  ARCHIVE    - Archive a data set to tape, or reload an archived data set.  
  
  2  BACKUP     - Backup a data set to tape, or reload a backed up data set.  
  
  3  SPACE      - List disk data set space or usage information.  
    MANAGEMENT  Compress or release unused space from data sets.  
                  Reset end-of-file on a sequential data set.  
  
  4  CATALOG    - Inquire or update the CA-ASM2 catalog.  
  
  5  QUEUE      - Invoke the CA-ASM2 command queue manager.  
  
  6  RSVP       - Report Selection and Variable Processing.  
  
  7  EXTENDED   - Extended Functionality Processing.  
  
  8  CATALOG    - Authorized maintenance to the CA-ASM2  
    MAINTENANCE Integrated Product Catalog
```

2.4 Archive Utility (Option 1)

The Archive Utility panel is accessed by selecting option 1 on the CA-ASM2 Primary Selection menu. The CA-ASM2 Archive Utility allows you to copy a data set from disk-to-tape. The disk data set is uncataloged and deleted. This utility also lets you reload an archived data set from an archive tape to an online DASD volume.

```

----- CA-ASM2 ARCHIVE UTILITY -----
OPTION ==>

  A  ARCHIVE    - Queue a data set to be archived
  R  RELOAD     - Queue a data set to be reloaded from archive

Data set name      ==>
Back version       ==>      (For reload, go back NN versions, 0 = most recent)
Comment           ==>
Logical queue name ==>

Archive Parameters: (If option "A" selected)
Retention days     ==>      Validate data set exists ==> YES
Permanent archive ==> NO    Qualifier to add to DSN ==>
Disk volume name   ==>

Reload Parameters: (If option "R" selected)
New data set name  ==>
Target volume      ==>
Original volume    ==>
Catalog at reload  ==>      (YES, NO, or UNCatalog)
Force reload       ==> NO

```

2.4.1 Archiving

Archiving is the process by which a data set is copied to a CA-ASM2 tape or disk and then deleted from the original disk and uncataloged. This process retains data for future use even though the volume or frequency of use does not normally warrant keeping the data set on disk. Archiving can occur automatically in accordance with your information center's standards, or a user can explicitly request it through the \$AR command. In either case, CA-ASM2 retains the data set for a specified, or default, time during which it may be reloaded to disk through a user request (\$RA). CA-ASM2 does not archive or restore a data set immediately upon request. It places the request in a queue to be processed when a batch archive or restore run is submitted. The ISPF Archive Utility panel provides menu support for the \$AR and \$RA commands.

2.4.2 Types of Archive

CA-ASM2 groups archived data sets onto controlled archived tapes. It writes many data sets to each tape, thus providing savings in tapes.

CA-ASM2 segregates archive tapes into two groups known as temporary archives and permanent archives. This reduces the handling and passing of tapes containing data that is to be kept for long periods of time, and most likely, referenced very infrequently. Any archive request with a retention period greater than three years is considered permanent. However, you may designate an archive data set as permanent, regardless of retention. The default retention period is two years for normal archives, and five years for permanent archives.

The disk-to-disk feature also provides storage of archived data sets on DASD volumes. The DASD volumes used for this purpose are referred to as the Disk Staging Area (DSA).

2.4.3 System-Initiated Archiving

In System-initiated archival, CA-ASM2 scans online disk volumes for data sets that are not preauthorized to remain on disk. The unauthorized data sets are then subject to tests for inactivity. A data set is inactive if it has not been accessed in "x" days. The "x" is determined by your information center standards. Inactive data sets that are archivable are archived.

2.4.4 User-Initiated Archiving

In User-initiated archiving, CA-ASM2 removes data sets from disk while keeping a copy of the data set available for future processing. A user archive (explicit archive) request is usually initiated through the CA-ASM2 command \$AR.

2.4.5 Queuing Data Sets to be Archived/Restored

The archive command lets you explicitly archive specified data sets to tape. To queue a data set for archive, select option A for ARCHIVE on the CA-ASM2 Archive Utility panel.

The reload command lets you queue an archived data set to be reloaded from tape to an online DASD volume. To queue a data set for reload, select option R for RELOAD on the CA-ASM2 Archive Utility panel.

2.4.6 Operands

Data set name	Specifies the name of a data set to be archived or reloaded. Normal TSO conventions apply. Enter either a fully-qualified data set name in apostrophes or an unqualified dsname for TSO profile prefixing.
Back version	For RELOAD. Designates that a back level of the data set is to be selected. (This implies there are multiple data sets in the catalog with the same name.) Specifies that the command should go back nn (0=most recent) versions of the data set in the IPC.
Comment	Specifies the text to be saved in the comment field. For ARCHIVE, you may enter up to 30 characters of comment to be preserved in the IPC. For RELOAD, you may enter up to 16 characters of comment to be passed to the end of the reload exit (\$RELDEXT).
Logical queue name	Specifies that this archive (reload) request be placed in a logical queue of requests with this queue name for later processing. CA-ASM2 processes all unload (reload) requests containing the same logical queue name when a batch archive (reload) job specifying that queue name is submitted. The qname may be one to eight characters in length.

2.4.6.1 Archive Parameters

Retention days	Specifies the number of days (up to your information center-set maximum value) that the data set is to be retained on tape. A value of 9999 sets retention to the maximum days defined by your information center.
Validate data set exists	Specifies that a data set's existence is to be validated prior to queuing the archival request. Enter NO to bypass validation; this enables data set archival on an offline volume. YES is the default.
Permanent archive	Specifies whether the data set is to be placed on a permanent archive tape. Enter YES for a permanent tape. NO is the default. Notice that even when NO is specified, the data set is placed on a permanent tape if the retention period specified exceeds the information center threshold for temporary archives.

Qualifier to add to DSN	Renames the specified data set by adding the dsnindx to the existing name when archived. It must be restored using the new name. The dsnindx may be one to eight characters in length.
Disk volume name	Specifies the volume serial number of the DASD volume where the data set being archived resides.

2.4.6.2 Reload Parameters

New data set name	Specifies the new name of the data set after it has been restored.
Target volume	Specifies a new target volume to which the data set is to be restored.
Original volume	Specifies the home volser DASD volume from which the data set was archived.
Catalog at reload	Specifies the desired catalog status for the data set when reload is complete. YES catalogs the data set at reload. NO does not catalog the data set at reload. UNC uncatalogs the data set when the reload is completed.
Force reload	Allows reloading into an existing data set. YES indicates that if the data set to be reloaded is found on the volume selected for reload, the existing data set is to be scratched to allow the reload. NO is the default.

2.5 Backup Utility (Option 2)

The Backup Utility panel is accessed by selecting option 2 on the CA-ASM2 Primary Selection menu. The CA-ASM2 Backup Utility lets you copy a data set from disk-to-tape. The disk data set is left undisturbed. This utility also lets you restore a data set from a backup tape to an online DASD volume.

```

----- CA-ASM2 BACKUP UTILITY -----
OPTION ==>

    B  BACKUP      - Queue a data set to be backed up
    R  RELOAD      - Queue a data set to be reloaded from backup

Data set name      ==>
Back version       ==>      (For reload, go back NN versions, 0 = most recent)
Comment           ==>
Logical queue name ==>

Backup Parameters: (If option "B" selected)
Retention days    ==>      Validate data set exists ==> YES
Disk volume name  ==>      Qualifier to add to DSN  ==>

Reload Parameters: (If option "R" selected)
New data set name ==>
Target volume     ==>
Original volume   ==>
Catalog at reload ==>      (YES, NO, or UNCatalog)
Force reload      ==> NO

```

2.5.1 Backup

Backup is the process by which a data set is copied to a CA-ASM2 tape or disk, while the original disk resident data set is left undisturbed. This process allows data to be referenced on disk, and ensures the data set may be reconstructed if the disk data set is damaged. Backup can occur automatically in accordance with your information center's standards, or it can be explicitly requested by a user through the \$BK command. In either case, CA-ASM2 retains the data set for a specified, or default, time during which it may be restored to disk through a user request (\$RB). CA-ASM2 does not backup or restore a data set immediately upon request. It places the request in a queue to be processed when a batch backup or restore run is submitted. The ISPF Backup Utility panel provides menu support to the \$BK and \$RB commands.

2.5.2 System-Initiated Incremental Backup

In System-initiated backup, CA-ASM2 scans online disk volumes for data sets that have been opened for update since the last time the data set was backed up. These data sets are automatically backed up.

This method ensures all data sets (on volumes processed by Incremental Backup) are backed up if they have been changed since the last incremental backup. Data sets not changed need not be backed up since a previous backup already exists. No action is necessary by the user other than ensuring the user's data sets reside on an incrementally backed up volume.

2.5.3 User-Initiated Backup

User-initiated backup supplements the system-initiated backup of CA-ASM2. A user backup (explicit backup) request is usually initiated through the \$BK command.

2.5.4 Queuing Data Sets to be Backed-Up/Restored

The backup command lets you explicitly backup specified data sets or VSAM clusters. To queue a data set for backup, select option B for BACKUP on the CA-ASM2 Backup Utility panel.

The reload command lets you queue a backed up data set to be reloaded from tape to an online DASD volume. To queue a data set for reload, select option R for RELOAD on the CA-ASM2 Backup Utility panel.

2.5.5 Operands

Data set name	Specifies the name of the data set to be backed up or restored. Normal TSO conventions apply. Enter either a fully-qualified data set name in apostrophes or an unqualified dsname for TSO profile prefixing.
Back version	Designates that a back level of the data set is to be selected for restore. (This implies there are multiple data set in the catalog with the same name.) Specifies that the command should go back nn (0=most recent) versions of the data set in the IPC.
Comment	Specifies the text to be saved in the comment field. For BACKUP, you may enter up to 30 characters of comment to be preserved in the IPC. For RESTORE, you may enter up to 16 characters of comment to be passed to the end of the reload exit (\$RELDEXT).

Logical queue name	Specifies that this backup (restore) request be placed into a logical queue of requests with this queue name for later processing. CA-ASM2 processes all unload (restore) requests containing the same logical queue name when a batch backup (restore) job specifying that queue name is submitted. The queue name may be one to eight characters in length.
---------------------------	---

2.5.5.1 Backup Parameters

Retention days	Specifies the number of days (up to your information center-set value) that the data set is to be retained on tape. A value of 9999 sets retention to the maximum days defined by your information center.
Validate data set exists	Specifies that a data set's existence is to be validated prior to queuing the backup request. Enter NO to bypass validation; this enables data set backup on an offline volume. YES is the default.
Disk volume name	Specifies the volume serial number of the DASD volume where the data set being backed up resides.
Qualifier to add to DSN	Renames the specified data set by adding the dsnindx to the existing name when backed up. It must be restored using the new name. The dsnindx may be one to eight characters in length backed up. It must be restored using the new name.

2.5.5.2 Reload Parameters

New data set name	Specifies the new name of the data set after it has been restored to the volume.
Target volume	Specifies a new target volume to which the data set is to be restored.
Original volume	Specifies the home volser DASD volume from which the data set was backed up.
Catalog at reload	Specifies the desired catalog status for the data set when the restore is complete. YES catalogs the data set when restored. NO does not catalog the data set when restored. UNC uncatalogs the data set when the restore is completed.
Force reload	Allows restoring into an existing data set. YES indicates that if the data set to be restored is found on the volume selected for restore, the existing data set is to be scratched to allow the restore. NO is the default.

2.6 Disk Space Management Utility (Option 3)

The Disk Space Management Utility panel is accessed by selecting option 3 on the CA-ASM2 Primary Selection menu. This utility lets you manage your own data sets or your information center's data sets efficiently.

```

----- CA-ASM2 DISK SPACE MANAGEMENT UTILITY -----
OPTION ==>

blank      - Display disk data set space information ($SM)
U  USAGE   - Display disk data set usage information ($US)
C  COMPRESS - Compress data set without releasing unused space
R  RELEASE  - Release unused space in data set(s) (compress optional)
E  RESET EOF - Reset End-Of-File to beginning of a sequential data set

Data set name ==>
Data set type ==> L      Calc DIR info ==> YES
Tape data set ==> YES    MSS data sets ==> YES

Compress or Release Parameters: (if option "C" or "R" selected)
BACKUP      ==> NO      COMPRESS      ==> NO      RELEASE      ==> NO
KEEP        ==> NO      LIST          ==> YES      SYSOUT       ==> NO
TRKS/CYLS   ==>         SAVE          ==>         PERCENT SAVE ==>
PRIMARY     ==>         SECONDARY    ==>         DIRECTORY  ==>
UNIT        ==>         VOLUME       ==>
BACKUP UNIT ==>         BACKUP VOLUME ==>
QUALIFER    ==>
BACKUP NAME ==>

```

2.6.1 Space Management

With the CA-ASM2 Disk Space Management utility you can easily determine both the amount of space that specified data sets occupy, and the frequency with which the data sets are used. You can compress data sets and release unused space from overallocated data sets. Obsolete or infrequently used data sets can be deleted or archived to tape.

The CA-ASM2 Disk Space Management utility searches the system catalogs to find all the data sets matching the criteria you specify. It then searches the disk volumes to obtain specific information about the data sets. If you so specify, the space allocations can be changed for more efficient use of the space available. The ISPF Disk Space Management Utility panel provides menu support to the \$SM and \$US commands.

2.6.2 Displaying Disk Data Set Information

To display disk data set space information, enter a blank in the OPTION field on the CA-ASM2 Disk Space Management Utility panel. If you do not enter any other fields, CA-ASM2 displays a list of all data sets beginning with your userid.

You may select a specific data set by entering the name of the data set in the Data set name field. Normal TSO naming conventions apply. Enclose fully-qualified data set names in single quotes.

Operands

Data set name	Specifies the name of the data set for which space information is requested. You may enter up to 44 characters.
Data set type	Specifies the high-level qualifier of data set names to be listed. By specifying an L in the Data set type field, and one or more index levels in the Data set name field, you can display information for any disk data sets beginning with the specified index levels.
Calc DIR info	Indicates partitioned data set directory information is to be calculated. YES is the default. NO saves time when the command is processed.
Tape data set	Indicates data sets cataloged to tape are to be listed. YES is the default. NO does not list them.
MSS data sets	Indicates data sets cataloged to mass storage system devices are to be listed. YES is the default. NO does not list them.

2.6.3 Displaying Disk Usage Data Set Information

To display disk data set usage information, select option U for USAGE on the CA-ASM2 Disk Space Management Utility panel. CA-ASM2 displays current usage data for any online, cataloged data set. Usage data consists of the following:

- Data set use count
- Date of last use
- Date and time of last update
- ID of the last user (ID is either the job name or TSO userid)

Note: Usage data is available only when the CA-ASM2 OPEN modification is installed. If you do not enter any other fields, CA-ASM2 displays all disk data sets beginning with the qualifier set for your TSO profile's prefix or your userid if there is no TSO profile prefix.

You may select a specific data set by entering the name of the data set in the Data set name field. Normal TSO naming conventions apply. Enclose fully-qualified data set names in single quotes. In this case, the Data set type field contains a space.

Operands

Data set name	Specifies the name of the data set for which space information is requested. You may enter up to 44 characters.
Data set type	Specifies the high-level qualifier of data set names to be listed. By specifying an L in the Data set type field, and one or more index levels in the Data set name field, you can display information for any disk data sets beginning with the specified index levels.

2.6.4 Compressing Partitioned Data Sets

A partitioned data set may be compressed in two ways. The COMPRESS option C causes the named data set to be compressed without releasing unused space. The RELEASE option R can also cause PDS compress if you enter a Y in the COMPRESS field (see Releasing Unused Space on page 2-17 for details).

When a data set is compressed by either method, you have the option of first making a backup copy of the data set prior to the compress. To select this option, enter Y in the BACKUP field. When you do this, a copy of the data is made under a new name. The new name is the same as the old name, but an index level is inserted immediately before the last qualifier. For example: USER1.MISC.DATA is backed up as USER1.MISC.BKUP.DATA.

Compress or Release Parameters

BACKUP	Specifies that a backup copy of the data set is to be made prior to the compress. NO is the default.
COMPRESS	Specifies that the data set is to be compressed. NO is the default.
RELEASE	Specifies that unused space from the data set is to be released. NO is the default.
KEEP	Specifies that the backed up copy of a PDS is to be retained after a successful compress. NO is the default.

LIST	Specifies that data set space information is to be displayed at the terminal. YES is the default.
SYSOUT	Specifies that the output from BACKUP is to be directed to the terminal.
TRKS/CYLS	Specifies tracks or cylinders for the backup copy allocation.
SAVE	Used in conjunction with RELEASE. Specifies the number of tracks or cylinders of unused space in the data set that is to be saved rather than released.
PERCENT SAVE	Used in conjunction with RELEASE. Specifies the percentage of used space that is to be saved as unused space. (For example, suppose 10 of the allocated 15 tracks of a data set are used. PERCENT SAVE 10 would indicate 10% of the 10 tracks, or one track, of unused space would be saved, and four tracks would be released.)
PRIMARY	Specifies the primary space allocation quantity to be used for the backup copy of a PDS before compressing. The default is the current size of the input PDS.
SECONDARY	Specifies the secondary space allocation quantity to be used for the backup copy of a PDS before compressing. The default is the current size of the input PDS.
DIRECTORY	Specifies the number of directory entries to be allocated to the backup copy of a PDS before compressing. The default is the current PDS directory size.
UNIT	Specifies the device type of the input data set if uncataloged.
VOLUME	Specifies the volser of the input data set (for uncataloged data sets).
BACKUP UNIT	Specifies the unit for the backup PDS copy.
BACKUP VOLUME	Specifies the volser for the backup PDS copy.
QUALIFIER	Specifies the backup copy name is derived from the input PDS name plus this additional qualifier.
BACKUP NAME	Specifies a new name for the backup data set.

2.6.5 Releasing Unused Space

To release unused space from sequential or partitioned data sets, select the **RELEASE** option **R**. You may also specify a number of tracks of unused space to be saved by entering the number in the **SAVE** field. Even if you make a mistake in the **SAVE** amount, CA-ASM2 never releases used space. If the data set is allocated in cylinders, the **SAVE** amount is rounded up to the nearest cylinder.

To release unused space for a data set, enter the name of the data set in the **Data set name** field. Normal TSO naming conventions apply. Enclose fully-qualified names in single quotes.

In conjunction with the **RELEASE** option, you can also compress a PDS prior to space release. See **Compress or Release Parameters** on page 2-15 for a list and description of release parameters.

2.6.6 Resetting End-of-File on Sequential Data Sets

To write an End-of-File at the beginning of a sequential data set, select **RESET EOF** option **E**. Enter the data set name to be reset in the **Data set name** field. Normal TSO conventions apply; enclose fully-qualified names in single quotes.

If you specified a non sequential data set, CA-ASM2 ignores the reset request.

2.7 Catalog Inquiry or Update (Option 4)

The Catalog Inquiry or Update panel is accessed by selecting option 4 on the CA-ASM2 Primary Selection menu. The CA-ASM2 Catalog Inquiry or Update panel provides menu support for the \$CI and \$CU commands.

```

----- CA-ASM2 CATALOG INQUIRY OR UPDATE -----
OPTION ==>

  I  INQUIRE    - Inquire about the CA-ASM2 catalog. (default)
  U  UPDATE      - Update a record in the CA-ASM2 catalog.
  D  DELETE      - Delete a record from the CA-ASM2 catalog.

Data set name ==>
Data set type ==>      (Blank-data set name, I-Index level, P-Pattern mask)
Back version  ==>      (go back NN data set versions, 0 = most recent)
Catalog type  ==> ARCH (ARCH - archive catalog, BKUP - back up catalog)

Inquiry Parameters:
List ACTIVE data sets ==> YES      List only last NNNN days ==>
List INACTIVE data sets ==> NO      List specific tape volume ==>
Permanent archives ==> NO          Display comments ==> NO
List dsa/tape VOLSERS ==> NO        Show standard heading ==> YES

Update Parameters:
New expiration date ==>              Undelete an entry ==> NO
New comment ==>

Delete Parameters:
Keep first NN data sets ==>

```

To display a complete or partial listing of a user's archived or backed up data sets, select option I for INQUIRE. If you do not enter any other fields than those shown above, CA-ASM2 displays a listing of all archived data sets identified as ACTIVE.

To change the retention period or the comment field associated with specified catalog entries and/or to undelete a logically deleted entry, select option U for UPDATE.

To deactivate entries in the catalog, select option D for DELETE.

2.7.1 Operands

Data set name	Specifies the name, index level, or pattern mask of catalog entries to be selected. For UPDATE and DELETE functions, only data set names are allowed. If unquoted, the user's TSO prefix is added for an unquoted data set name or pattern mask. If the name is an index level, CA-ASM2 displays only names beginning with the levels specified. If the name is a pattern mask, catalog entries whose names match the mask is displayed.
Data set type	Specifies the type of name entered in the Data set name field: Blank = data set name, I = index level, P = pattern masking.
Back version	Not valid for INQUIRY. Designates that a back level of the data set is to be selected. (This implies there are multiple data sets in the catalog with the same name.) Specifies that the command should go back nn versions of the data set in the CA-ASM2 catalog.
Catalog type	Specifies whether action is to be taken for archive (ARCH) or backup (BKUP) records in the IPC.

2.7.2 Inquiry Parameters

List ACTIVE data sets	List all data sets whose retention period on tape has not expired and that have not been reload to disk. YES is the default.
List only last NNNN days	List data sets unloaded within the last NNNN days.
List INACTIVE data sets	List archived/backed up data sets whose retention period on tape has expired and have not yet been purged from the catalog. NO is the default.
List specific tape volume	List specific tape volume serial and file sequence number of each data set.
Permanent archives	List only data sets residing on permanent archive tapes. NO is the default.
Display comments	Displays any user comments given when the data set was unloaded. NO is the default.
List dsa/tape VOLSERS	List the disk home volume, tape volume, and file sequence number. NO is the default.
Show standard heading	Display heading information that precedes the list. YES is the default.

2.7.3 Update Parameters

New expiration date	Specifies a new expiration date for the catalog entry. This is a Julian date (YYDDD) representing the date on which an unloaded data set expires.
Undelete an entry	Requests that a catalog record marked for deletion be made active again. NO is the default.
New comment	Specifies a revised user comment replacing the current comment in the catalog.

2.7.4 Delete Parameters

Keep first NN data sets	Specifies that all entries for a given data set name are deleted from the catalog except the NN most current version.
--------------------------------	---

2.8 Queue Manager (Option 5)

The Queue Manager panel is accessed by selecting option 5 on the CA-ASM2 Primary Selection menu. The CA-ASM2 Queue Manager facility manages the command queues for \$AR, \$BK, \$RA, and \$RB requests. The Queue Manager panel provides menu support to the \$QM command.

```

----- CA-ASM2 QUEUE MANAGER -----
OPTION ==>

    L - List queue entries                D - Delete queue entries

ASM2 command ==> $AR                    Command source ==> $RSVP
Queue name   ==>
Data set name ==>
Comment      ==>
Print fields ==> QNAME, DSNAME
Sort fields  ==> DSNAME

Additional Parameters for unload commands: (valid for $AR and $BK commands)
QUALIFY ==>          UNIT      ==>          VOLUME ==>
RETPD   ==>          TYPE      ==>          MSS    ==>
VSAM     ==>          VSAMASSOC ==>

Additional Parameters for reload commands: (valid for $RA and $RB commands)
USERID   ==>
NEWNAME  ==>
NEWVOL   ==>          ORIGVOL ==>          SUBSYSTEM ==> TSO
ASM2VOL  ==>          FILE(S) ==>
DATE     ==> 91307      TIME     ==>

```

To list the entries in the command queue, select L for LIST. To remove an entry in the command queue, select D for DELETE. Be cautious about deleting entries without first listing and reviewing.

2.8.1 Operands

ASM2 command	Specifies the queued command that is to be listed or deleted. Valid values are \$AR, \$BK, \$RA, and \$RB.
Command source	Selects queue entries based on the name of the CA-ASM2 command that added the entries to the queue: \$AR, \$BK, \$RA, \$RB, \$RSVP, or blank for all.

Queue name	Selects entries based on the logical queue names entered when the command was queued. If you do not enter a queue name, CA-ASM2 selects only those command entries that did <u>not</u> specify a logical queue name. If you enter *, it selects all queue names.
Data set name	Selects entries based on the data set name or mask used to queue the entries. The default is DSNNAME(userid.-). When using pattern masking, enclose the mask in quotes to prevent your prefix from being added to the mask; example: dsn('.-') finds all data sets.
Comment	Selects entries based on the comments that were entered when the command was queued. The maximum length is 30 characters.
Print fields	Selects and orders the queued command fields that are to be printed. You may select as fields any selection keywords valid for that command. The default order is VOLUME, QNAME, DSNNAME.
Sort fields	Identifies the fields to be used to sort selected queue entries. You may select as fields any selection keywords valid for that command. The default order is DSNNAME, VOLUME, QNAME.

2.8.2 Parameters for Unload Commands (\$AR and \$BK)

QUALIFY	Selects queued entries by the value of the high level index.
UNIT	Identifies the unit on which the data set currently resides.
VOLUME	Selects entries residing on this volume.
RETPD	Selects queued entries with this retention period.
TYPE	Selects archive entries that are either permanent or temporary.
MSS	Limits the search to data sets that reside on an MSS volume.
VSAM	Selects queued entries for VSAM data sets.
VSAMASSOC	Specifies whether the data set name is a VSAM data set and has VSAM associations. Associations include paths and alternate indexes.

2.8.3 Parameters for Reload Commands (\$RA and \$RB)

USERID	Selects entries containing the listed userids that reference the original issuer of the command.
NEWNAME	Specifies the data set names established with the NEWNAME option when the command was queued. The default is DSNNAME(userid.-). When using pattern masking, enclose the mask in quotes to prevent your prefix from being added to the mask; example: dsn('-.') finds all data sets.
NEWVOL	Specifies volumes established with the NEWVOL option when the command was queued.
ORIGVOL	Specifies the original volume from which the data set was unloaded.
SUBSYSTEM	Selects queue entries based on the subsystem in use when the entry was queued, TSO or JOB (batch).
ASM2VOL	Specifies the tape or disk volume serial number on which the unloaded data set resides. Specifying *DISK* requests only unloads resident on disk. Specifying *TAPE* requests only unloads resident on tape.
FILE(S)	Specifies a list of tape file sequence numbers of queued entries.
DATE	Selects entries based on the Julian date (YYDDD) on which the command was queued.
TIME	Selects entries that were queued at a particular time, specified in HOURS:MINUTES:SECONDS (HH:MM:SS). You must provide leading zeros. A time prefix such as 13: may be used to select only entries queued between 1 and 2 p.m.

2.9 RSVP (Option 6)

The RSVP Primary Selection menu panel is accessed by selecting option 6 on the CA-ASM2 Primary Selection menu. The CA-RSVP ISPF panels let you create, save, modify, delete, or execute \$RSVP commands.

```

----- CA-RSVP PRIMARY SELECTION MENU -----
OPTION ==>

P  CA-RSVP PARMS - Specify CA-RSVP ISPF dialog parameters.

I  INPUT SOURCE- Set primary source(s) of information to search.
N  NAMES       - Select data sets by level(s) or dsname pattern mask(s).
A  ATTRIBUTES  - Select data sets by identifying characteristics.
F  FORMAT      - Define report format, sort fields, or print fields.
B  BILLING     - Control entries to the transaction file.
Q  ASM2 QUEUE  - Place data sets selected into the ASM2 archive/backup queue
U  USER EXIT  - Specify user exit for tailoring of CA-RSVP processing.
V  VSAM       - Specify reporting and searching controls for VSAM objects.

E  EXECUTE     - Execute $RSVP command.

$RSVP COMMAND NAME  ==>          (blank for selection list)

```

You can perform the following functions:

- Enter the name of an existing \$RSVP command and execute it.
- Name, build, and execute a new command. Use a unique name that you assign to the command.
- Enter the name of an existing command, modify it, and execute the modified command.
- Switch to another Saved Commands table.

To process a \$RSVP command, enter the name of the command on the \$RSVP COMMAND NAME line.

To execute a \$RSVP command, enter E on the OPTION line and press Enter. The current \$RSVP command is fetched from the Saved Commands table and passed to RSVP. The command output is written to a temporary data set allocated by the Dialog Manager. After the \$RSVP command is completed, the dialog invokes either the ISPF Browse utility or the ISPF Editor (depending on which was selected on the RSVP Dialog Parameters panel - see page 2-26) for command output.

To display the selection list of saved \$RSVP commands (Saved Commands table), press Enter with the OPTION and \$RSVP COMMAND NAME lines blank.

Note: If you try to build a command without giving it a name, the Saved Commands Table always displays.

A sample RSVP Saved Commands table is shown next.

```

$RSVP SAVED COMMANDS ----- LINE 000001 COL 001 080
COMMAND ==>                                SCROLL ==> CUR

S - Select  D - Delete  E - Execute
NAME        HEADING                                LAST MODIFIED  ID
DEM001      DSNs not used within last 14 days  96/06/25 11:38 C900023
DEM002      Summary listing by volume          96/06/25 11:38 C900023
DEM01B      Summary listing by high-level indx  96/06/25 11:30 C900023
DEM004      Scan for multiple "SYSx" data sets  96/06/25 11:41 C900023
DEM005      PO data sets in danger of Sx37     96/11/19 18:33 C900072
DEM007      Find $DEFRAG candidate volumes     96/06/25 11:44 C900023
DEM008      Map DSNs under fixed head position  96/06/25 11:44 C900023
DEM009      Pattern Masking Facility           96/11/19 18:30 C900072
DEM010      Report on VSAM clusters             96/05/17 09:18 C900023
DEM011      Components of VSAM clusters        96/05/17 09:19 C900023
DEM012      VSAM changed since yesterday       96/05/17 09:19 C900023
REPORT01    TSO volume report (in cylinders)    96/05/17 11:41 C900023
REPORT02    DSNs on storage and work volumes   96/05/17 10:57 C900023
REPORT03    Data sets less than 20% used       96/05/17 11:15 C900023
REPORT04    PO data sets over 90% used         96/05/17 11:19 C900023
REPORT05    Data sets over 12 extents          96/05/17 11:22 C900023
REPORT06    Data sets blocked less than 2K     96/05/17 11:27 C900023
***** BOTTOM OF DATA *****

```

The RSVP Saved Commands table displays when you press Enter on the RSVP Primary Selection menu with the OPTION and \$RSVP COMMAND NAME lines blank.

All \$RSVP commands that exist in ISPF mode are listed in a table called the Saved Command Table. When you add a new command, its name is automatically added to the table, and after you modify an existing command, it automatically substitutes the new version of the command for the original in the table. RSVP has a starter Saved Commands Table that contains some common \$RSVP commands. Alternate or other saved command tables may be allocated and initialized through a job in members NS10IJ or SPFVTBL in SAMPJCL.

Your Saved Commands table may differ somewhat from the one shown here if it was modified when RSVP was installed. If the Saved Commands table has more than one panel, the bottom line on each panel indicates another one exists. You can get to the continuation panel by using the PF11 key to scroll down.

The table lists the name of each saved \$RSVP command and the HEADING1 saved with the command. It shows the date and time each command was last modified, and the TSO user ID of the last modifier.

The Saved Commands table lets you select, delete, or execute a command by entering the appropriate letter (S, D, E) in front of the command name. You can perform the following functions:

- Select (S) a command, returning to the RSVP Primary Selection Menu to modify the command.
- Purge (D) a command by deleting its name from the table.

- Execute (E) a command.

Note: You can view any RSVP panel for any command saved in the RSVP Saved Commands Table by entering the option letter (from the CA-RSVP Primary Selection menu) in the selection field to the left of the command name. For example, entering F next to a command name (F DEMO1) displays the Report Format keywords for that command.

The RSVP Dialog Parameters panel displays when you enter the letter P (RSVP PARMS) on the COMMAND line. This panel lets you alter the environment of the dialog to suit your own requirements.

```

----- RSVP DIALOG PARAMETERS -----
COMMAND ==>

Saved Commands table Name ==> 'CAI.ASM2V.ARCH.RSVP.TABLE'

Messages Alarm           ==> YES      (YES/NO)
Table Action Messages    ==> NO       (YES/NO)
Put Variables in Profile ==> NO       (YES/NO)
Output Viewing Mode      ==> BROWSE   (BROWSE/EDIT)

```

By default, the fully-qualified VSAM cluster name of the RSVP Saved Commands table in your system appears on the Saved Commands table Name line. All \$RSVP commands that you create during the dialog session are saved to this table.

The Messages Alarm option controls the audible terminal alarm when messages are displayed. The default YES sounds the terminal alarm and NO silences the alarm.

The Table Action Messages options controls whether table action messages display when you access the \$RSVP Saved Commands table. NO is the default.

The Output Viewing Mode lets you determine whether the ISPF Editor (EDIT) or Browse utility (BROWSE) presents the output data after the command executes. BROWSE is the default. Browse lets you view the data without carriage control characters present; no further action is required. Edit lets you view the data with the print controls in column 1 of the data. You can modify the data and create new files from the displayed data. All functions of the ISPF Editor are available.

A sample edit macro, RSPRINT, is provided to print the output data being viewed when in Edit mode. When you issue RSPRINT from the COMMAND line, the macro

copies the displayed data to a new temporary data set, creates JCL to print the data using the ISPF Hardcopy Utility information (ISPF option 3.6), and submits this to JCL. For the ISPF Editor to find the RSPRINT macro, the library containing the macro must be allocated to the SYSPROC DDNAME.

All ISPF panel variables can be saved with the \$RSVP commands in the Saved Commands table. NO is the default for the Put Variables in Profile option. NO is recommended to conserve space in the PROFILE.

The RSVP Primary Input Source(s) Selection panel displays when you enter the letter I (INPUT SOURCE) on the COMMAND line. This panel lets you direct RSVP to search the IPC, system catalogs, specific generic volume serials, and SMS database information.

```
----- RSVP Primary Input Source(s) Selection -----
COMMAND ==>
Search volumes ==>
=====
Do NOT search ==>
these volumes ==>
MSVGPs ==>
Esoterics ==>
Volumes in SMS ==>
Storage Groups ==>
SMS Data Classes =>
SMS Mgmt Classes =>
SMS Stor Classes =>
SMS Stor Groups =>

Enter any non-blank character to activate the following primary sources:
( X ) Search OS Catalogs on Index(es)
(   ) Search ASM2 Integrated Product Catalog on Index(es)
(   ) Search CA1 Tape Management Catalog (TMC)
(   ) Search Volume Master File (VMF)
ASM2 Catlg Id ==>      (Optional ASM2 catalog identifier)
Mount Unit   ==>      (unit name for volume mounts)
```

Note: RSVP support for CA1TMC and TLMSVMF does not have a facility for designating the TAPEDB or CAIVMF files. These files must be allocated through TSO ALLOC or DDNAME before searching the TMC or VMF.

The RSVP Data Set Selection panel displays when you enter the letter N (NAMES) on the COMMAND line. This panel lets you specify RSVP keywords that control the selection of data sets by comparing against levels of data set names, or data set pattern masks.

```

----- RSVP DATA SET SELECTION -----
COMMAND ==>

LIKE      ==>
NOT LIKE  ==>

CONTAINING ==> DATA
NOTCONTAIN ==>

BEGIN     ==>
NOT BEGIN ==>

ENDING    ==>
NOT ENDING ==>

LEVEL     ==>
NOT LEVEL ==>

LAST LEVEL ==>
NOT LAST  ==>

```

The RSVP Boolean Selection panel displays when you enter the letter A (ATTRIBUTES) on the COMMAND line. This panel lets you control the selection of data sets by identifying data set characteristics or attributes. The 24 attribute panels let you define multiple logical sets of data set characteristics. Logical sets are related to each other by Boolean OR operations. Attributes within the same logical set are related to each other by Boolean AND operations.

```

----- RSVP BOOLEAN SELECTION -----
COMMAND ==>
DEL - Delete this Set
NS - Next Logical Set
PS - Prior Logical Set
IS - Insert a new Logical Set
GP - Goto Panel 'nn' in this Set
NP - Next Panel in this Set
PP - Prior Panel in this Set
XF - Expand value Field

Logical set 01 of 01
Panel 01 of 24 in this set

FIELD      OPERATOR  VALUE      FIELD      OPERATOR  VALUE
DSORG      ==> EQ ==> VS      ALLOC      ==>      ==>
LMDATE     ==>      ==>      CAT        ==>      ==>
LMJOB      ==>      ==>      CB         ==>      ==>
LMTIM      ==>      ==>      CDATE      ==>      ==>
MDATE      ==>      ==>      CREDIT     ==>      ==>
MODID      ==>      ==>      DSIND      ==>      ==>
LDATE      ==>      ==>      EDATE      ==>      ==>
LRECL      ==>      ==>      EXPDT      ==>      ==>
LSTUS      ==>      ==>      RETPD      ==>      ==>
BLKSZ      ==>      ==>      KBALLOC     ==>      ==>

```

Each attribute panel within a logical set lets you select from a list of identifying data set characteristic fields. To use an attribute FIELD, you would enter a logical

OPERATOR in the same row as the FIELD you wish to activate. Valid logical operators are:

- EQ** Equal to
- NE** Not equal to
- LE** Less than or equal to
- LT** Less than
- GE** Greater than or equal to
- GT** Greater than

See the subtopic "Attribute Selection" under "Data Set Selection" in Chapter 2 of the *CA-ASM2 RSVP Reference Guide* for detailed information on characteristic selection.

Note: Use the positional controls (DEL,NS, PS, and so on) at the top of the panel instead of PF keys to operate this panel and the other panels in the set.

The RSVP Report Format panel displays when you enter the letter F (FORMAT) on the COMMAND line. This panel lets you specify keywords that control the format of the report or transaction file by identifying report layout, fields to be sorted on, fields to be printed, and so on. See the topic "Keyword Descriptions for Sort" and "Keyword Descriptions for Output Format" in Chapter 2 of the *CA-ASM2 RSVP Reference Guide* for detailed descriptions.

```

----- RSVP REPORT FORMAT -----
COMMAND ==>

LIST      ==>                ALLOC UNITS      ==> TRKS

PRINT     ==> YES                MERGE OUTPUT ==> YES
OPTION    ==> NEW
FIELDS    ==> DSNNAME ALLOC USED PCT HIALLRBA HIUSERBA NUMRECS
          ==>

SORT      ==> YES
FIELDS    ==> VOLUME
          ==>

DSNAME LENGTH ==> 44                SMS NAME LENGTH ==>
INDEX TOTALS ==>                IPC COMMENT LEN  ==>
TOTALS      ==> YES                CHANGE CHARS  ==>
SUB TOTALS  ==>                CHANGE CHARS  ==>

CHARS/LINE  ==> 133  LINES/PAGE ==> 60  BREAK ==>
HEADING     ==> YES
HEADING1    ==> Find all DSNs containing ASM2DEMO
HEADING2    ==> non-VSAM

```

The RSVP Transaction File panel displays when you enter B (BILLING) on the COMMAND line. This panel lets you specify keywords that control the input and output transaction files. See the topic "Keyword Descriptions for Transaction Files" in Chapter 3 of the *CA-ASM2 RSVP Reference Guide* for a description of these keywords.

```
----- RSVP TRANSACTION FILE -----  
COMMAND ==>  
  
Input Transaction File:  
  
  Data set name ==>  
  DD name      ==>  
  
  Field list   ==>  
  
  Presorted    ==>  
  
Output Transaction File:  
  
  Field list   ==>  
  
  Action       ==>  
  
  Comment      ==>
```

Note: The input transaction file is dynamically allocated based on the information entered above. The output transaction file is not dynamically allocated. It must be explicitly allocated prior to the execution of the \$RSVP command.

The RSVP Queue ASM2 Command panel displays when you enter the letter Q (ASM2 QUEUE) on the COMMAND line. This panel lets you put explicit archive and backup requests directly into the CA-ASM2 logical command queues. See the subtopic "Keyword Descriptions for Queues" under "Archive Backup Queues" in Chapter 3 of the *CA-ASM2 RSVP Reference Guide* for a description of these keywords.

```
----- RSVP QUEUE ASM2 COMMAND -----  
COMMAND ==>  
  
ASM2 Command ==>      ($AR or $BK)  
Queue Name   ==>      (logical queue name)  
Qualifier    ==>  
Retention    ==>      (retention period on tape)  
Comment      ==>  
Permanent    ==>
```

The RSVP User Exits panel displays when you enter the letter U (USER EXIT) on the COMMAND line. This panel lets you control the routines for tailoring the \$RSVP command. See Chapter 5, Tailoring, of the *CA-ASM2 RSVP Reference Guide* for detailed descriptions of the exits and user CSECT.

```
----- RSVP USER EXITS -----  
COMMAND ==>  
  
Invoke Selection Exit ==> NO  
Invoke Post-Sort Exit ==> NO  
Customized User CSECT ==>
```

The RSVP VSAM Selection panel displays when you enter the letter V (VSAM) on the COMMAND line. This panel lets you control the search for VSAM objects. See the subtopic "Keyword Descriptions for VSAM Elements" under "VSAM Reporting" in Chapter 2 of the *CA-ASM2 RSVP Reference Guide* for a description of the keywords.

```
----- RSVP VSAM SELECTION -----  
COMMAND ==>  
  
VSAM Object ==> DATA      (Enter DATASPACE, CLUSTER, or DATA)  
VSAM Catalog ==>          (catalog name, DD name, or ALL)
```

2.9.1 Building a \$RSVP Command with ISPF Panels

You can build and save detailed \$RSVP commands using the RSVP panels under ISPF. Each command is constructed by paging through panel options accessible from the RSVP Primary Selection menu.

This example demonstrates the ease of building a \$RSVP command. It briefly steps through a series of panels that represent a distinct component of the sample command.

This sample \$RSVP command reports on all QC data sets that begin with C9000, and are on the verge of using up their allocated space. In fact, they threaten to cause an Sx37 abend (insufficient space) should more data be added.

In this example, assume the command already exists. It is named QCSx37, and is selected from the RSVP Primary Selection menu as shown here.

```

----- RSVP PRIMARY SELECTION MENU -----
OPTION ==>

P  RSVP PARMS  - Specify RSVP ISPF dialog parameters.

I  INPUT SOURCE- Set primary source(s) of information to search.
N  NAMES       - Select data sets by level(s) or dsname pattern mask(s).
A  ATTRIBUTES  - Select data sets by identifying characteristics.
F  FORMAT      - Define report format, sort fields, or print fields.
B  BILLING     - Control entries to the transaction file.
Q  ASM2 QUEUE  - Place data sets into the ASM2 archive/backup queue.
U  USER EXIT   - Specify user exit for tailoring of RSVP processing.
V  VSAM        - Specify reporting or searching controls for VSAM objects.

E  EXECUTE     - Execute $RSVP command.

$RSVP COMMAND NAME  ==> QCSx37  (blank for selection list)

```

Since you are limiting data set selection to QC data sets, select option N (NAMES) on the RSVP Primary Selection Menu to enter the RSVP Data Set Selection panel.

Using pattern masking, enter the criteria on the LIKE line as shown.

```
----- RSVP DATA SET SELECTION -----  
COMMAND ==>  
  
LIKE      ==> C9000-.QC.-  
NOT LIKE  ==>  
  
CONTAINING ==>  
NOTCONTAIN ==>  
  
BEGIN     ==>  
NOT BEGIN ==>  
  
ENDING    ==>  
NOT ENDING ==>  
  
LEVEL     ==>  
NOT LEVEL ==>  
  
LAST LEVEL ==>  
NOT LAST  ==>
```

As the panel shows, the data set criteria for this report define:

- Data sets that have a high-level index of C9000 followed by any other characters.
- All data sets that contain QC as the first characters in the second component level.

To further limit the selection criteria, select option A (ATTRIBUTES) on the RSVP Primary Selection menu to enter the RSVP Boolean Selection panel.

There are two ways to do this. The simple way is to type A on the COMMAND line of the current panel and press ENTER. If you could not recall that the option desired was A, you could, instead, press PF3 to return to the RSVP Primary Selection Menu, look it over, then select option A.

The sample command is designed to select QC data sets threatening to abend because of insufficient space. You would enter the supporting conditions on the RSVP Boolean Selection panel.

```

----- RSVP BOOLEAN SELECTION -----
COMMAND ==>
  DEL - Delete this Set          GP - Goto Panel 'nn' in this Set
  NS - Next Logical Set          NP - Next Panel in this Set
  PS - Prior Logical Set         PP - Prior Panel in this Set
  IS - Insert a new Logical Set   XF - Expand value Field

      Logical set 01 of 01          Panel 02 of 24 in this set

FIELD      OPERATOR  VALUE          FIELD      OPERATOR  VALUE
ADDRESS ==>      ==>          UNUSED ==>      ==>
OPTCD  ==>      ==>          USECNT ==>      ==>
PCT    ==> GE ==> 80          USED   ==>      ==>
PW     ==>      ==>          VOLSQ  ==>      ==>
RD     ==>      ==>          VS     ==>      ==>
RECFM  ==>      ==>          ABLEN  ==>      ==>
RKP    ==>      ==>          ABSTR  ==>      ==>
SECQ   ==> EQ ==> 0          EXT   ==>      ==>
SECT   ==>      ==>          EXTSEQ ==>      ==>
TRKALLOC ==>      ==>          CYLPVOL ==>      ==>

```

This panel shows that the following conditions are selected:

- Data sets that have used 80 percent or more of their allocated space (PCT GE 80).
- Data sets that do not have secondary quantities allocated to them (SECQ EQ 0).

Notice the information in the panel indicating that this panel is 2 of 24 in this set. The other 23 panels in the set show other fields, but are not needed to illustrate the sample command.

After defining the selection criteria, you can shape the appearance of the output report. Select option F, FORMAT, on the RSVP Primary Selection menu to enter the RSVP Report Format panel.

```

----- RSVP REPORT FORMAT -----
COMMAND ==>

LIST      ==>                ALLOC UNITS      ==> TRKS

PRINT     ==> YES                MERGE OUTPUT ==> YES
OPTION    ==> NEW
FIELDS    ==> DSNAME USED UNUSED EXT PCT SECQ VOLUME ALLOC
          ==>

SORT      ==> NO
FIELDS    ==>
          ==>
DSNAME LENGTH ==>                SMS NAME LENGTH ==>
INDEX TOTALS ==>                IPC COMMENT LEN  ==>
TOTALS      ==> YES                CHANGE CHARS   ==>
SUB TOTALS  ==>                CHANGE CHARS   ==>

CHARS/LINE ==> 133  LINES/PAGE ==> 60  BREAK ==>
HEADING    ==> YES
HEADING1   ==> QC Data Sets in Danger of Sx37
HEADING2   ==>

```

A highly individualized command such as QCSx37 might warrant a unique report format. The FIELDS keyword is where you define the items to report on, and order them as they are to appear on the report. In this report, the only fields listed are:

- Data set name
- Used space
- Unused space
- Percentage of total used space
- Number of secondary quantities
- Volume

At this point, the QCSx37 command is built. You can save it, or execute it right away.

To execute the command, select option E, EXECUTE, on the RSVP Primary Selection menu. This produces a report similar to the one shown on the following page.

```
BROWSE - C900072.D86037.T0944 ----- LINE 000000 COL 001 080
COMMAND ===>                                SCROLL ===> PAGE

***** TOP OF DATA *****
QC DATA SETS IN DANGER OF SX37
DSNAME                USED  UNUSED  EXT  PCT  SEQ
C9000TST.QC.TESTCL2.D    105      0    1  100    0
C9000TST.QC.TESTCL3.D    10      0    1  100    0
C9000TST.QC.TESTCL5.D    10      0    1  100    0
C9000TST.QC.TESTCL2.I     1      0    1  100    0
C9000TST.QC.TESTCL5.I     1      0    1  100    0
TOTAL                  127      0    5
***** BOTTOM OF DATA *****
```

This completes the example construction and execution of a \$RSVP command.

2.10 Extended Functionality Processing (Option 7)

The Extended ISPF User Interface was designed for Version 4.2 of CA-ASM2. It front-ends all CA-ASM2 \$AI, \$BI and \$CI commands used to obtain information about specified data sets. Using ISPF allows you to create restore requests in a "fill in the blanks" format so that you do not need to know standard CA-ASM2 commands or parameters.

ISPF panels give you access to files that have been archived or backed up, allowing you to perform actions on files that you select using ISPF display panels.

To do a restore without the ISPF interface you must be knowledgeable of where data sets are, know background information on these data sets, and know which commands and parameters to use for each condition. The normal approach without ISPF is to do a catalog inquiry for a file which gives information about the number of versions available and when the backup or archive was done. A \$RA or \$RB command is then needed, including associated parameters to indicate the version number, new name or new volume.

Using the ISPF User Interface, your request to see information from the IPC is presented on ISPF panels, from which you can simply select the file, mask, version or application that you want to process. All normal options can be requested from the displayed panel; restore, update, delete and so forth.

Depending on the options chosen, JCL is generated automatically and presented to you in edit mode or automatically submitted if no edits are required. Your request can also be queued for delayed processing or executed online.

For special functions you can access a group of files using a single command (mass commands).

All possible manual steps are checked and executed by this application. When requesting to restore a file that is still online, the FORCE parameter is set automatically. When requesting to restore a file in logical delete status an update command is generated to make the file eligible for restore (when the automatic undelete option is enabled).

Special functions for the CA-ASM2 administrator are built in the interface. All online volumes are checked for full or incremental backup availability, and the last available version for each backup is reported on. You may optionally generate full-volume and incremental restores, and optionally optimize the incremental restore to use one job per tape.

All IPC backup, restore and recovery jobs can be invoked using the ISPF User Interface.

2.10.1 Benefits

Following are some of the benefits you can expect from using the ISPF User Interface as opposed to less automated procedures.

- You can restore files without knowing CA-ASM2 commands, tape volser, space needed or the disk volume name.
- You can request information on formatted panels, with a single point of control to initiate actions against a file, a set of files or volumes.
- A simple restore can be initiated directly from ISPF option 3.4
- For large restores you can specify the number of jobs that must be created by your request. Several jobs can be created at the same time, depending on the number of tape volsers needed (one job per needed volser).
- Allows you to list all available disk volsers in your company and optionally, the free space available, and use the NEWVOL parameter (when authorized and not an SMS volume).
- When NEWVOL is specified, it is determined if there is enough space to continue; if not, the system prompts for another volser to continue the restore(s).
- If you select a VSAM file restored with \$DEFRA, all needed information in the IPC is collected (full tape DSN, tape unit, tape volser) to generate the needed JCL.
- If the selected file was copied with the logical data mover, you can restore specific members from a PDS without creating JCL.
- You can restore by application. Once you have defined an application (with up to ten masks), you can use this virtual application name later in your restore request.
- For special VSAM files or handling, you can specify the VSAM data set names for which you want to execute a Delete/Define before the restore.
- You can display a panel with all tape volsers needed in the restore job (for operators).
- For full-volume restores, all available versions of a specific disk are displayed to select from.
- All online volumes can be listed with an indication if a full or incremental backup is available.
- You can easily change the retention date or comment of your selected files.
- You can generate your own unique user commands with automatic variables substituted.
- You can move your restore request directly to CA-7.
- You can generate an incremental recovery job for a volume, giving the advantage that multiple jobs are created depending on the number of tapes used.
- All needed maintenance jobs, such as IPC and Journal backup, and IPC restore or recovery can be generated directly.

- Integrity checks between CA-1/CA-TLMS and CA-ASM2:
 - Are all tape management tapes still known to CA-ASM2?
 - Are all CA-ASM2 tapes still known to tape management?
 - Do all duplex tapes have a corresponding archive tape?
 - Do all master tapes have a duplex tape?
 - Is there more than 1 duplex tape for a master tape?
 - LOxxx checking

2.10.2 ASM2 Restore Selection Menu

Extended functionality processing is accessed by selecting option 7 on the CA-ASM2 Primary Selection menu. This displays the ASM2 Restore Selection menu, shown next. From this menu, each of the extended functions (the ISPF User Interface) is selected. The first time you select this interface, the ASM2 restore selection menu shown next is displayed. If options 1, 2, or 5 are selected, that option becomes the default initial panel. The next time you select option 7 from the CA-ASM2 Primary Selection menu, this menu is bypassed. To change the default, type MENU on the command line. This returns you to the ASM2 Restore Selection menu where you can change the default.

```

----- COMPUTER ASSOCIATES - ASM2 4.2 -----
COMMAND ==>

ASM2 restore selection menu                                User = Userid
                                                         Time = 07:54
Select one of the options ==>                           Date = 15/08/96
                                                         Date = 96228
0 - Profile Update                                       Appl = L1AA
1 - Dataset or mask restore                             Msg = ISPF V.4
2 - Multiple Datasets or Application restore            Form = European
3 - All datasets from a specific tape volser           Auth = SYST
4 - All files from a disk before-after a date          Syst = XAD1
5 - All previous options together                      SMS = Y
                                                         Sec = TSS
A - Application and Special VSAM Definitions           Opt = L
B - Full Volume Restore and Incremental Recovery       Level= 9604
C - Cross Reference Menu
D - Load Alternate/Recheck user options and security
E - IPC backup, recovery and reporting
F - Show some customization values
G - Volume Space map

Press Enter to continue, PF1 for help, PF3 end

```

The menu contains various selection options that you may choose depending on your authority.) An overview of each selection is presented next. The authority levels that may access each selection are shown in parentheses.

Note: See *CA-ASM2 Getting Started* for a description of how to change/assign authority levels.

<u>Option</u>	<u>Description</u>
0 - Profile Update	Presents you with three Profile Update Panels where you can set run time options for the ISPF User Interface. (ALL authority levels.)
1 - Data set or mask restore	Displays the basic selection screen, where you can enter a data set name or mask.
2 - Multiple data sets or application restore	Displays the normal selection panel. This panel allows you to enter up to 3 data set names or masks or you can choose to restore an application. (ALL authority levels.)
3 - All data sets from a specific tape volser	Allows you to access all files from a specific tape. (SYST and OPER authority levels only.)
4 - All files from a disk before-after a date	Lists files from a specific disk volser, limited by date. (SYST and OPER authority levels only.)
5 - All previous options together	Displays a panel allowing you to specify up to 3 masks or an application, limited by certain parameters such as disk, date or time. (SYST and OPER authority levels only.)
A - Application and Special VSAM Definitions	Application correlates a group of data set names or masks to an application name used during a restore request. VSAM correlates VSAM data set names to PDS members that contain IDCAMS Delete/Defines of the VSAM data sets. (SYST and OPER authority levels only.)
B - Full Volume Restore and Incremental Recovery	Allows you to do a simple full volume restore without any recovery from incremental backups, do a volume restore followed by an incremental recovery, or do only an incremental recovery. (SYST and OPER authority levels only.)

- C - Cross-Reference Menu** Provides the ability to obtain a cross-reference of online volumes to CA-ASM2 incremental backups or full-volume backups. (SYST and OPER authority levels only.)
- D - Load Alternate/Recheck user options and security**
Allows you to reaccess user options or security after either has been updated. (SYST and OPER authority levels only.)
- E - IPC backup, recovery and reporting**
Displays a secondary menu with options to generate backup and recovery jobs for the IPC. (SYST and OPER authority levels only.)
- F - Show some customization values**
Shows the values extracted from the active OPTIONx and customization module L1AAXMOD. (ALL authority levels.)
- G - Volume Space map** Calls directly the volume space map panels. These panels can also be called from different points to assist in selecting a volume. (SYST and OPER authority levels only.)

2.11 Catalog Maintenance (Option 8)

Selecting option 8 from the CA-ASM2 Primary Selection menu displays the following panel.

```
----- CA-ASM2 CATALOG UPDATE UTILITY -----  
OPTION ==> 1  
  
  1 - Unload record display or update  
  2 - Defrag Volume Record display or update  
  
FOR UNLOAD RECORDS:  
  Data set name ==> SYS3.PRODUCT.DATA  
  
FOR $DEFRAG VOLUME RECORDS:  
  Disk volser   ==>  
  
TO SPECIFY AN ALTERNATE IPC:  
  IPC catalog identifier ==>                               (Optional)
```

The ISPF catalog maintenance facility allows an authorized user, usually the CA-ASM2 Database Administrator, to perform maintenance functions in the IPC. An authorized user can easily view and update any modifiable field in the IPC by simply keying over the displayed value of the field on the related catalog maintenance panel.

Catalog maintenance is described in detail in Chapter 4, “Catalog Maintenance.”

Chapter 3. Extended ISPF Applications

This chapter describes each of the panels and fields associated with options 0 through G of the ASM2 Restore Selection menu (described in Chapter 2, “CA-ASM2 Primary Selection Menu”).

3.1 Authority Levels

Access to the ISPF User Interface is controlled by external security having six different authority levels:

- **PROG authority**
 - Can only access data sets beginning with their userid
 - Can access the masks defined in the exception list in L1AAXMOD
 - All restore request are queued (deferred execution)
 - All update commands are executed online
 - NEWVOL is not allowed
 - No mass commands can be used
 - No application definitions
 - No VSAM exception definitions
 - No full or incremental restore
 - No IPC jobs can be performed
 - Only options 0, 1, 2, and F are displayed on the main menu
- **PRG1 authority**
 - Same rules as PROG, except that requests are executed in batch mode
 - Depending on the parameter X2SUB in customization program L1AAXMOD, you can receive the JCL in Edit, or the JCL is submitted automatically
 - Only options 0, 1, 2, and F are displayed on the main menu
- **PRG2 authority**
 - Same rules as PROG, except that the user can access all data sets
 - Provides queued reloads

- PRG3 authority
 - All files can be accessed
 - Only options 0, 1, 2, and F are displayed on the main menu
 - All commands and options are permitted on these restricted menu options
 - Provides batch reloads
- SYST authority
 - Can perform all operations
 - No panel with the needed tapes is shown
 - All options are displayed on the main menu
- OPER authority
 - Same as SYST user, except that just before the Edit of the JCL, a panel displays all needed tapes for the restore operation
 - All options are displayed on the main menu

From the ASM2 Restore Selection menu, several options may be picked for displaying and entering information on data sets. Of these, options 0, 1, 2 and F are available to all authority levels, while the other options are reserved for the SYST and OPER authority levels only.

When one of the selection panels is being displayed you can return to the menu by typing MENU on the Command Line, or by pressing PF3.

Note: See Appendix D, “ISPF Primary Option Menu” for an alternate way of invoking the ISPF interface.

3.2 Profile Update (Option 0)

The profile update panels are displayed by entering option 0 from the ASM2 Restore Selection menu. There are a total of three panels displayed. When a panel parameter is changed it remains in effect until changed again. The change takes place immediately upon completing the panel.

```
LIAAP000 ----- CA-ASM2 EXTENDED MAIN MENU-----  
COMMAND ==>  
  
    ASM2 restore selection menu                                User = RICHV  
                                                                Time = 14:45  
                                                                Date = 07/16/97  
Select one of the options ==> 1                               Date = 97197  
                                                                Appl = LIAA  
                                                                Msg = ISPF V.4  
                                                                Form = American  
                                                                Auth = SYST  
                                                                Syst = XAD1  
                                                                SMS = Y  
                                                                Sec = TSS  
                                                                Opt = S  
                                                                Level= 9611  
  
    0 - Profile Update  
    1 - Dataset or mask restore  
    2 - Multiple Datasets or Application restore  
    3 - All datasets from a specific tape volser  
    4 - All files from a disk before-after a date  
    5 - All previous options together  
  
    A - Application and Special VSAM Definitions  
    B - Full Volume Restore and Incremental Recovery  
    C - Cross Reference Menu  
    D - Load Alternate-Recheck user options and security  
    E - IPC backup, recovery and reporting  
    F - Show some customization values  
    G - Volume Space map  
  
Press Enter to continue, PF1 for help, PF3 end
```

3.2.1 Panel 1 of 3

The first of three panels to update your profile is shown next.

```

L1AAP016 ----- CA-ASM2 EXTENDED PROFILE UPDATE-----
COMMAND ==>

WELCOME Userid TO ASM2 PROFILE UPDATE  (1/3)                User = Useid
                                                                Time = 07:55
                                                                Date = 15/08/96
                                                                Date = 96228

Space Calculation      ==> YES      (Yes,No)
VSAM table check      ==> YES      (Yes,No)
Extended Display      ==> YES      (Yes,No)
Update/Delete online  ==> YES      (Yes,No)
Use ORIGVOL           ==> NO       (Yes,No)
Authority code        ==> SYST     (PROG,PRG1,PRG2,PRG3,OPER,SYST)
Delete file when FORCE ==> NO       (Yes,No)
If YES, confirm delete ==> NO       (Yes,No)
Use popup panels      ==> YES      (Yes,No)
Multiple JCL Edits    ==> NO       (Yes,No)
Number of Tape restore jobs only ==> 3      (1-9)
Total number of restore jobs ==> 5      (1-9)
Display all selected files for restore ==> YES (Yes,No)
Default version number on selection ==> 0      (0,*)
Display VSAM files from Full Backup ==> YES (Yes,No)

Press Enter to verify, PF8 to continue with next panel, PF7 to return

```

Field Descriptions

Space Calculation

When a specific volser is selected during a restore, a calculation is performed to see if there is enough free space on the selected disk. Selecting NO bypasses this calculation.

VSAM table check

This option is set to YES to specify that all VSAM restore selections are to be checked against the VSAM Table before the restore is done. For more information about this VSAM table, please see Extended System Applications, option A2.

Extended Display

Selecting YES displays two lines of information for each file on the display panel. Selecting NO displays twice as many files but only one line of information for each.

Update/Delete online

Selecting YES causes all update and delete commands to be done in realtime and no JCL generated. This is the default for PROG and PRG1 users.

Use ORIGVOL

Generates the parameter ORIGVOL for restore commands. The original volume is needed when there are different versions of a data set and some are not cataloged.

Authority code

The authority code is automatically set to its highest level and can only be changed to a lower level. Levels that can be selected are shown next with the higher levels first.

SYST This level allows you to do all operations and generate JCL to execute your request.

OPER Allows the same authority as SYST but a panel is displayed (shown in listing all tape volsers needed to do the requested restore before the JCL is generated.

PRG3 Allows access to all data sets but with a limited number of display panels made available.

PRG2 Allows access to all data sets but with a limited number of display panels made available and the requests are queued.

PRG1 Allows access to only data sets beginning with the user's userid and only those files specified in the Exception List in customization program L1AAXMOD.

PROG Allows the same access as PRG1 except all restore requests are queued to CA-ASM2 with L1AA as the QNAME.

Delete file when FORCE

When a file is restored that is still online, the FORCE parameter is needed to allow CA-ASM2 to overwrite the existing file. If NEWVOL() is also specified, CA-ASM2 uncatalogs the existing file and catalogs the newly restored file. Selecting YES generates a delete command to delete the existing file rather than uncataloging it.

If YES, confirm delete

Only applicable when Delete Files When FORCE is set to YES. Displays a confirmation panel each time a file is about to be deleted.

Use popup panels

Enables or disables all popup panels associated with ISPF 3 or higher.

Multiple JCL Edits

When submitting JCL, some jobs may need to be submitted before the restore actually takes place; for example, an undelete job for a file that was in delete status. Setting this option to YES provides two separate edits requiring you to submit the JCL manually. The first submit contains all needed

steps for the second job to complete successfully. With this option set to NO, there is only one edit, with the update job generated first. Normally this does not cause any problem because the job terminates directly as there is no waiting for a tape to be mounted.

Number of Tape restore jobs only

Specifies the maximum number of jobs to generate for restores from tape (not disk). You can indicate how many jobs can be generated for one request based on the number of tape drives available.

Total number of restore jobs

This parameter is particularly useful when restoring data sets that have been backed up or archived to disk. Whereas the previous parameter indicates the maximum number of jobs to generate for restores from tape only, this parameter is the total amount of jobs that can be generated, either tape or disk. Normally this parameter has a value that is higher than the previous one, keeping some jobs free for restoring from disk. The logic for disk-to-disk restores is to group them together in different jobs so that each job has an equal amount of tracks to restore.

Display all selected files for restore

Specifies to display a panel with all selected files to be restored before generating the JCL. This allows you to alter the selections or to print all selected files before generating the JCL to run the job.

Default version number on selection

Specifies which version(s) of data set(s) to display.

Display VSAM files from Full Backup

If you don't want to see VSAM files taken by Full Backup in your display list, you can set this option to No.

Pressing PF8 displays the next panel.

3.2.2 Panel 2 of 3

The second of three panels to update your profile is shown next.

```

L1AAP005 ----- CA-ASM2 EXTENDED PROFILE UPDATE-----
COMMAND ==>

WELCOME Userid TO ASM2 PROFILE UPDATE  (2/3)                User = Useid
                                                                Time = 07:55
                                                                Date = 15/08/96
                                                                Date = 96228

Show panel L1AAP022 ==> YES          (Yes,No)
Show member backup ==> NO           (Yes,No)
Account info        ==> '90600000L.Username...'
Execution class     ==> A
Msgclass            ==> X
Workfile prefix     ==> Userid
Optional extra card after the jobcard (begin with //):
==> /*

CA-7 only:

Submit to CA7       ==> NO           (Yes,No)
Delete jcl after ex ==> NO           (Yes,No)

Press Enter to verify, PF8 to continue with next panel, PF7 to return

```

Field Descriptions

APPLICATION Display P022

Yes specifies to display all maskings that are defined in a selected application.

Show member backup

If member backups are taken, you can set this option to Y. This adds an extra option on your selection panels.

JOB CARD info

Default jobcard information can be changed using the three associated fields.

- Account info
- Execution class
- Msgclass

Workfile prefix

By default special workfiles on data sets beginning with your userid are allocated, but you can change this, if needed.

Submit to CA-7

Specifies whether to submit all requests to the CA-7 interface.

Delete JCL After ex

Specifies to delete the restore JCL moved to a CA-7 library if the condition code of the restore was 0 (zero).

Pressing PF8 displays the next panel.

3.2.3 Panel 3 of 3

The third of three panels to update your profile is shown next.

```
L1AAP099 ----- CA-ASM2 EXTENDED PROFILE UPDATE-----  
COMMAND ==>  
  
WELCOME Userid TO ASM2 PROFILE UPDATE (3/3)           User = Userid  
                                                    Time = 11:07  
                                                    Date = 14/07/97  
                                                    Date = 97195  
  
These are your current color settings. You can  
change these settings via ISPF option 0.  
  
Profile Colors:  
  
White      ==>  
Yellow     ==>  
Pink       ==>  
Blue       ==>  
Turq       ==>  
Red        ==>  
  
Press Enter to verify, PF8 to continue, PF7 to return
```

The third panel of the Profile Update set allows you to change the predefined colors. This could be needed when accessing this ISPF application with a Personal Computer.

Pressing PF8 updates your options.

3.3 Data Set or Mask Restore (Option 1)

Selecting option 1 from the ASM2 Restore Selection menu displays a panel similar to the one shown next.

```

L1AAP002 ----- CA-ASM2 EXTENDED RESTORE SELECTION-----
COMMAND ==>>

TYPE   ==> B      ( A : archive, B : backup, L: both)      User = Userid
                                                    Time = 09:33
                                                    Date = 15/08/96
Selections to limit the files selected (pattern masking)    Date = 96228

DSN     ==> Userid.-                                     VERSION ==> 0      ==> EQ
                                                    SORT      ==> 6      (? for opt)

Press Enter to continue, PF3 for Menu or PF1 for help

```

This panel allows you to select a data set to be restored from the IPC that has been backed up or archived.

Field Descriptions

- TYPE** The three valid types are:
- A - specifies to restore data sets that have been archived.
 - B - specifies to restore data sets that have been backed up.
 - L - specifies to restore data sets that have been archived *or* backed up.
- DSN** Specifies the data set(s) to be restored. All pattern masking facilities of RSVP may be utilized. For a description of these masking facilities, see the *CA-ASM2 RSVP Reference Guide*.
- VERSION** Specifies the version of data set to be selected which can limit the files that are displayed. Enter the version to be selected, 0 for version 0, 1 for version -1 or enter * to restore all versions. Use the related logical operator to test on the version values (GE, EQ, LE, NE are valid).

SORT Indicates the sort option to be used on the display panel. Entering ? displays a panel listing all possible sort options.

After entering your selections, press ENTER to display a list of data sets meeting your specified criteria. See page 3-22 for a description of the Data Set Display panel.

3.4 Multiple Data Sets or Application Restore (Option 2)

Selecting option 2 from the ASM2 Restore Selection menu displays a panel similar to the one shown next.

```

L1AAP037 ----- CA-ASM2 EXTENDED RESTORE SELECTION-----
COMMAND ===>

TYPE      ===> B      ( A : archive, B : backup, L: both)      User = Userid
                                                    Time = 11:54
                                                    Date = 15/08/96
                                                    Date = 96228

DSNmask ===> Userid.-      VERSION ===> 0      ===> EQ
                        ===>      SORT      ===> 6      (? for opt)
                        ===>      MEMBERS ===>      (Y,N,0)

or

Applic. ===>      (? for a list of applications)

Press Enter to continue, PF3 for Menu or PF1 for help

```

This panel allows you to select up to 3 data set names, using masks *or* restore an application.

3.4.1 Application Restores

An application is a set of files that logically belong together. Applications are normally predefined by your administrator. Applications have the benefit of containing all selections needed to include all files for a given application.

Field Descriptions

TYPE	The three valid types are: <ul style="list-style-type: none"> ■ A - specifies to restore data sets that have been archived. ■ B - specifies to restore data sets that have been backed up. ■ L - specifies to restore data sets that have been archived <i>or</i> backed up.
DSNmask	Specifies the data set(s) to be restored. All pattern masking facilities of RSVP may be utilized. For a description of these masking facilities, see the <i>CA-ASM2 RSVP Reference Guide</i> .
Applic	The name of the application of data sets to be restored. Enter a ? to obtain a list of all available applications.

- VERSION** Specifies the version of data set to be selected. This can be used to limit the files that are displayed. Enter the version to be selected, 0 for version 0, 1 for version -1 or enter * to restore all versions. Use the related logical operator to test on the version values (GE, EQ, LE, NE are valid).
- SORT** Indicates the sort option to be used on the display panel. Entering ? displays a panel listing all possible sort options.

If you do not know which applications are defined, or which files an application contains, enter a ?. This displays the following panel with all defined applications.

```

L1AAP057----- CA-ASM2 EXTENDED ----- ROW 1 FROM 3
COMMAND ===>                                     Scroll ===> DATA

  CMD   APPLIC  (S to select, B to Browse)      FILES
-----
      DLDLV
      JOE
      SMP
      JOHN
***** END OF ASM2 REQUEST *****

```

From this display panel you may browse an application or select it. When you select an application from this panel, or if you define the application name without using ?, the Application confirmation panel is displayed.

Note: The Application Confirmation panel is not displayed unless enabled in your profile. See page 3-8 for details.

```

L1AAP022 ----- CA-ASM2 EXTENDED APPLICATION DISPLAY-----
COMMAND ==>

Files that are selected (if you Enter) :                User = Userid
                                                    Time = 14:40
Applic.==> SMP                                           Date = 15/08/96
                                                    Date = 96228

DSN(s) ==> Userid.CAI.CAI-
           ==> Userid.CAI.-.C-D
           ==> Userid.CAI.SMP-
           ==> Userid.CAI.PPOPTION
           ==> Userid.CACT.-
           ==>
           ==>
           ==>
           ==>
           ==>

Files ==> 24      You selected Backup selection

Press Enter to confirm search, PF3 to CANCEL search

```

This panel displays all files that are predefined as an application. The list of DSNs are used to obtain your files from the IPC.

If the files displayed are correct, press Enter to continue. PF3 cancels the search and return to the previous panel.

```

L1AAP105 ----- CA-ASM2 EXTENDED ----- ROW 1 TO 8 OF 8
COMMAND ==>                                           Scroll ==> DATA
M159 ** Backup dates for application DEVL , use S to select **
CMD   UNL DATE   TIME   #FIL  COMMENT (application &ygrp1 +)
---   ---
S     03-06-96   09:50    9     BEFORE APPLY CA1
      14-05-96   09:57   10     BEFORE APPLY CA7
      17-04-96   11:23    9     BEFORE APPLY SORT
      06-04-96   03:57   10     BEFORE APPLY ASM2
***** BOTTOM OF DATA *****

```

This panel displays the backup history for the application that you have selected. The most recent backups are listed from top to bottom and the number of associated files is listed.

A backup set is created based on the backup date, backup time and an optional comment. This allows you to create user backups through an RSVP step that uses the COMMENT keyword followed by an ASM2EXPB step. This comment is inserted in the IPC.

From the application backup history you can select the needed backup set based on Date-Time and optional comment.

You can select an application set by entering S to the left of the data set as shown.

After entering your selections, press Enter to display a list of data sets meeting your specified criteria. See page 3-22 for a description of the Data Set Display panel.

3.4.2 Application Restore Warning

Note that in the previous panel that a certain number of files is associated with each application. CA-ASM2 checks to ensure that this number matches the number of files it finds for the selected application. If the numbers do not match, the next panel is displayed.

```
L1AAP046 ----- CA-ASM2 EXTENDED APPLICATION WARNING-----  
COMMAND ==>  
  
APPLICATION restore Warning                                User = Userid  
                                                         Time = 08:05  
                                                         Date = 16/08/96  
                                                         Date = 96229  
  
** ATTENTION **  
  
You only have 12 files selected  
  
But the APPLICATION Defintions indicated that you need 13 files  
  
  
Press Enter to continue PF3 to cancel request
```

This panel does not necessarily indicate a selection error. It is possible that after the application was defined with a generic mask, new files were added in the application. This panel is displayed as a precaution. If you are in doubt, check with your administrator.

Pressing Enter continues with the restore. To abort the restore, press PF3.

3.5 Restoring All Data Sets From a Specific Tape Volser (Option 3)

Selecting option 3 from the ASM2 Restore Selection menu displays a panel similar to the following.

```

L1AAP038 ----- CA-ASM2 EXTENDED RESTORE SELECTION-----
COMMAND ==>

TYPE      ==> B      ( A : archive, B : backup, L: both)      User = Userid
                                                    Time = 17:39
                                                    Date = 15/08/96
                                                    Date = 96228

DSNmask ==> Userid.-      VERSION ==> *      ==> EQ
                        SORT ==> 6      (? for opt)
                        MEMBERS ==>      (Y,N,0)

TAPEVOL ==>      (full tape volser)

If your IPC is very large, this may be a long running process.
If possible, use RSVP to obtain the list.

Press Enter to continue, PF3 for Menu or PF1 for help

```

This selection allows you to obtain all data sets located on a specific tape for the purpose of issuing a mass command at a later time.

The full tape volser must be filled in, and the version parameter must be set to an * to obtain all data sets on the selected tape.

Field Descriptions

TYPE	The three valid types are: <ul style="list-style-type: none"> ■ A - specifies to restore data sets that have been archived. ■ B - specifies to restore data sets that have been backed up. ■ L - specifies to restore data sets that have been archived <i>or</i> backed up.
DSNmask	Specifies the data set(s) to be restored. All pattern masking facilities of RSVP may be utilized. For a description of these masking facilities, see the <i>CA-ASM2 RSVP Reference Guide</i> .
TAPEVOL	Specifies the volser of the tape unit containing all of the selected files.

VERSION	Specifies the version of data set to be selected. This can be used to limit the files that are displayed. Enter the version to be selected, 0 for version 0, 1 for version -1 or enter * to restore all versions. Use the related logical operator to test on the version values (GE, EQ, LE, NE are valid).
SORT	Indicates the sort option to be used on the display panel. Entering ? displays a panel listing all possible sort options.

After entering your selections, press Enter to display a list of data sets meeting your specified criteria. See page 3-22 for a description of the Data Set Display panel.

3.6 Restoring All Files From a Disk Before/After a Date (Option 4)

Selecting option 4 from the ASM2 Restore Selection menu displays a panel similar to the following.

```

L1AAP039 ----- CA-ASM2 EXTENDED RESTORE SELECTION-----
COMMAND ==>

TYPE      ==> B      ( A : archive, B : backup, L: both)      User = Userid
                                                    Time = 20:28
                                                    Date = 15/08/96
                                                    Date = 96228

DSNmask ==> Userid.-      VERSION ==> *      ==> EQ
                        SORT   ==> 6      (? for opt)
VOLSER ==>                MEMBERS ==>      (Y,N,0)
                        (full disk volser)

Backup date and time selection:
From      ==> *      (ddmmyy)      ==> EQ  (EQ,NE,GE,LE)
          ==> *      (hhmm)
To        ==> *      (ddmmyy)      ==> EQ  (EQ,LE)
          ==> *      (hhmm)

If you have a very large IPC, this could be a long running process.

Press Enter to continue, PF3 for Menu or PF1 for help

```

This panel allows you to limit your restore selections to those within a date range, optionally limited by disk volser.

You can also generate an incremental recovery job for a specific disk, entering the dates and times from which to select files. In this case, the VERSION parameter must be set to 0 so that only the most recent version is recovered.

Field Descriptions

TYPE	<p>The three valid types are:</p> <ul style="list-style-type: none"> ■ A - specifies to restore data sets that have been archived. ■ B - specifies to restore data sets that have been backed up. ■ L - specifies to restore data sets that have been archived <i>or</i> backed up.
DSNmask	<p>Specifies the data set(s) to be restored. All pattern masking facilities of RSVP may be utilized. For a description of these masking facilities, see the <i>CA-ASM2 RSVP Reference Guide</i>.</p>
VOLSER	<p>Limits the display list to the specified volser. This must be a full 6-character name, or an * to have no volser limitation.</p>

From/To	<p>Limits the display by backup date and/or time. The first date and time can be used to select all files from, before or after a specific date. This is done by using the logical delimiter just after the Date fields. Valid values are EQ, NE, GT, LT, GE and LE.</p> <p>The second date and time parameters can be used to set a To date to be used in conjunction with the From date.</p>
VERSION	<p>Specifies the version of data set to be selected. This can be used to limit the files that are displayed. Enter the version to be selected, 0 for version 0, 1 for version -1 or enter * to restore all versions. Use the related logical operator to test on the version values (GE, EQ, LE, NE are valid).</p>
SORT	<p>Indicates the sort option to be used on the display panel. Entering ? displays a panel listing all possible sort options.</p>

After entering your selections, press Enter to display a list of data sets meeting your specified criteria. See page 3-22 for a description of the Data Set Display panel.

3.7 Restoring All Previous Options Together (Option 5)

Selecting option 5 from the ASM2 Restore Selection menu displays a panel similar to the following.

```

L1AAP001 ----- CA ASM2 EXTENDED RESTORE SELECTION-----
COMMAND ==>

TYPE      ==> B      ( A : archive, B : backup, L: both)      User = Userid
                                                    Time = 23:44
                                                    Date = 15/08/96
                                                    Date = 96228

DSNmask   ==> -.
==>
==>
Applic.   ==>
                                                    VERSION ==> *      ==> EQ
                                                    SORT    ==> 6      (? for opt)
                                                    MEMBERS ==>        (Y,N,0)

VOLSER    ==> *      (full disk volser)
TAPEVOL   ==> *      (full tape volser)
BKDATE    ==> *      (ddmmyy) ==> *      (hhmm) ==> GE      (EQ,NE,GE,LE)
to        ==> *      (ddmmyy) ==> *      (hhmm) ==> EQ      (EQ,LE)
BKTYPE    ==> *      (V,U,I or *)      ==> EQ      (EQ,NE,GE,LE)
COMMENT   ==> *
SYSID     ==> *

Press Enter to continue, PF3 for Menu or PF1 for help

```

This panel is a composite of all the other panels. It provides detailed selection criteria to choose data sets to be restored.

Field Descriptions

- TYPE** The three valid types are:
- A - specifies to restore data sets that have been archived.
 - B - specifies to restore data sets that have been backed up.
 - L - specifies to restore data sets that have been archived *or* backed up.
- DSNmask** Specifies the data set(s) to be restored. All pattern masking facilities of RSVP may be utilized. For a description of these masking facilities, see the *CA-ASM2 RSVP Reference Guide*.
- VOLSER/TAPEVOL** Limits the display list to the specified volser. This must be a full 6-character name, or an * to have no volser limitation.
- TAPEVOL** The base tape volser where CA-ASM2 copied this file (or *DISK* when the copy resides in the DSA).

BKDATE	Limits the display by backup date and/or time. The first date and time can be used to select all files from, before or after a specific date. This is done by using the logical delimiters. Valid values are EQ, NE, GT, LT, GE and LE.
to	A second date and time parameter can be used in conjunction with the BKDATE to further limit files being selected.
BKTYPE	Specifies the types of filters that can be used to initiate a backup. V Full volume backup U User initiated backup I Incremental backup * Any backup
COMMENT	You can further limit the display of files to those with certain comments. Entering an * displays all files meeting other criteria entered on this panel.
SYSID	If needed you can select a specific or generic (ending with an *) SYSID.
VERSION	Specifies the version of data set to be selected. This can be used to limit the files that are displayed. Enter the version to be selected, 0 for version 0, 1 for version -1 or enter * to restore all versions. Use the related logical operator to test on the version values (GE, EQ, LE, NE are valid).
SORT	Indicates the sort option to be used on the display panel. Entering ? displays a panel listing all possible sort options.

After entering your selections, press Enter to display a list of data sets meeting your specified criteria. See page 3-22 for a description of the Data Set Display panel.

Note: Enter a DSN mask that does not begin with - as this creates a temporary ISPF table with all the selected files in it, giving very poor performance. Limit your selections to a qualified mask.

3.8 Data Set Display Panels

The options on the ASM2 Restore Selection menu provide you with a panel to fill in your criteria for selecting data sets to be restored. Once you have completed any of these panels, press Enter to display a list of data sets meeting your specifications.

After you have entered all of your respective selection criteria and pressed ENTER, a temporary ISPF table is built based on your selections and displayed on the following Data Set Display panel.

This panel allows you to issue individual commands on single data sets or to issue a mass command on all data sets **displayed**. All commands are described in Chapter 5 of this guide.

You may resort this panel by entering SRT on the command line. A menu appears giving you ten different ways of sorting the data sets.

```

L1AAP003 ----- CA-ASM2 EXTENDED ----- ROW 1 OF 70
COMMAND ==>                                     Scroll ==> DATA

```

CMD	DATASETNAME	R	VERS	IPCDATE	TIME	T
	Userid.CACT.PIMLIB		0000	01-09-96	08:00	A
	Userid.CACT.PROFILE		0000	12-01-96	16:55	B
	Userid.CACT.PROFILE	R	0000	08-12-96	17:30	A
	Userid.CACT.PROFILE.GK		0000	12-27-96	08:16	A
	Userid.CAI.CAICLIB	R	0000	11-04-96	17:48	A
	Userid.CAI.CAIISPS		0000	12-01-96	16:55	B
	Userid.CAI.CAIISPS	R	0000	04-24-96	18:00	A
	Userid.CAI.CAILPA		0000	12-02-96	17:40	A
	Userid.CAI.CAIMAC		0000	10-21-96	17:08	A
	Userid.CAI.CAIPROC		0000	11-19-96	17:07	B
	Userid.CAI.CAISRC		0000	05-26-96	08:00	A
	Userid.CAI.JCOM.CZ260LLD		0000	05-26-96	08:00	A
	Userid.CAI.JCOM.CZ260MLD		0000	05-26-96	08:00	A
	Userid.CAI.PPOPTION	R	0000	03-11-96	17:21	A
	Userid.CAI.SMPPTS		0000	05-26-96	08:00	A
	Userid.CAI.SMPPTS		0000	05-26-96	08:00	A
	Userid.CAI.SMPSCDS		0000	05-26-96	08:00	A
	Userid.CAI.SMPSTS		0000	05-26-96	08:00	A

```

***** END OF ASM2 REQUEST *****

```

3.8.1 Normal Field Descriptions

COMMAND	Mass commands are entered on this line to perform action on all files displayed . Mass commands are described in Chapter 5, “Command Descriptions,”
Row nn of nn	Defines the total amount of entries in the ISPF table. When issuing mass commands, only the displayed entries are processed, not all entries in the table. Thus, in the example, 18 of the available 70 files are displayed. Entering a mass command only processes these 18 files. Use PF8 to scroll forward through the table.
CMD	Line commands are entered to the left of the selected file to perform action on single files. Line commands are described in Chapter 5, “Command Descriptions.”
DATASETNAME	Data set names of files meeting your selection criteria.
R	Restore indicator. When an R appears in this field, the file has been previously restored.
VERS	Indicates the version of the file. 0000 is the latest version, 0001 version -1, and so forth.
IPCDATE	The date the file was backed up (MM-DD-YY or DD-MM-YY).
TIME	The time the file was backed up (HH:MM).
T	Indicates the type of unload, A for archive, B for backup.

To obtain more information about each file, you can display an extended display panel by entering EXT on the command line. This displays a panel containing two lines of information per data set as shown in the following panel. To return to a single line display, enter NORM on the command line.

You can also switch between a 1 line display to a 2 line display by pressing Enter.

L1AAP004 ----- CA-ASM2 EXTENDED ----- ROW 1 OF 82									
COMMAND ==>					Scroll ==> DATA				
CMD	DATASETNAME				R VERS	IPCDATE	TIME	T	
TRKS	TAPEVOL	TAPESEQ	DISKVOL	RELDATE	LASTUSED	IPCTYPE	RETPD		

	Userid.CAI.CA7.ARF				0000	10-14-96	17:50	A	
00016	ASM189	051	MV8013		09-22-96	USER	0355		
	Userid.CAI.CA7.ARF				0000	09-15-96	16:58	B	
00016	AS1552	035	MV8013		09-12-96	IBKUP	0000		
	Userid.CAI.CA7.ARF				R 0001	01-17-96	18:03	A	
00016	ASM529	036	MV8002	09-12-96	12-26-96	USER	0084		
	Userid.CAI.CA7.ARF				R 0002	11-07-96	08:01	A	
00016	ASM576	062	MV8002	11-08-96	10-15-96	USER	- DELT		
	Userid.CAI.CA7.ARF.HELP				0000	12-02-96	17:40	A	
00017	ASM376	058	MV8002		11-08-96	USER	0038		
	Userid.CAI.CA7.ARF.LOADLIB				0000	12-30-96	18:28	A	
00029	ASM491	054	MV8007		12-08-96	USER	0066		
	Userid.CAI.CA7.ARF.LOADLIB				R 0001	11-04-96	18:02	A	
00029	ASM567	080	MV8007	11-07-96	10-13-96	USER	0010		
	Userid.CAI.CA7.CONTROL				0000	12-06-96	18:43	A	
00030	ASM595	080	MV8003		11-12-96	USER	0042		
	Userid.CAI.CA7.CONTROL				0001	12-04-96	18:07	A	
00030	ASM382	062	MV8003		11-12-96	USER	0040		

Extended Field Descriptions

TRKS	Number of tracks that this file occupies.
TAPEVOL	The base tape volser where CA-ASM2 copied this file, (or *DISK* when the copy resides in the DSA).
TAPESEQ	Tape sequence number of the file on the tape (blank when the copy resides on disk).
DISKVOL	The disk volser where this file was located at the time of backup or archive.
RELDATE	Indicates the date the file was restored if applicable.
LASTUSED	Indicates the LSTUS field of this file at the time of backup.
IPCTYPE	Indicates the IPC record type.
RETPD	Indicates the retention period of this file. Depending on your site standards, this field can be expressed in days counted from today, or days from the date of backup. If a file is in logical delete status, this field is set to DELT. If this file is prefixed with a - this file has (or had) a negative retention date.


```

LIAAP089 ----- CA-ASM2 EXTENDED SPECIAL DEFINITIONS-----
COMMAND ===>

ASM2 special definitions                                User = Userid
                                                        Time = 07:56
Special definitions selection ===>                    Date = 15/08/96
                                                        Date = 96228

1 - Application definitions
2 - VSAM exceptions table definition

Press Enter to continue, PF1 for help, PF3 end

```

Application definitions	Correlates a group of data set names or masks to an application name that can be used during a restore request.
VSAM exceptions	Correlates VSAM data set names to PDS members that contain IDCAMS Delete/Defines of the VSAM data sets. These are used when restoring VSAM data sets to optimize the buffer space which influences restore performance.

Chapter 3. Extended ISPF Applications 3-25

3.9.1 Option A1 - Application Definitions

Selecting option A1 displays the first ISPTLIB library containing the Application table (L1AAT004). This table contains all application definitions and is a permanent ISPF table.

If the table also exists in your ISPPROF library, the results of a comparison of the update dates and times are also displayed. After any updates to the Application table, and before it is moved from your ISPPROF library to your ISPTLIB library, the target library may be altered.

The next panel illustrated shows a typical information panel received after selecting Application definition.

Note: It is a prerequisite that you have a PDS allocated to the ddname ISPTABL to permit you to write an output ISPF table.

L1AAP051 ----- CA-ASM2 EXTENDED -----
COMMAND ==>

User = Userid
Time = 12:12
Date = 11/16/96
Date = 96320

APPLICATION DEFINITION

96/12/02 IS EQUAL TO 96/12/02
10.48.03 IS >= THAN 10.48.03
WE WILL TAKE VERSION Userid.ISPF.ISPPROF
AND MOVE IT BACK TO Userid.CAI.CAIISPT

Press Enter to continue, PF3 command to goback

Pressing Enter displays the following panel.

```

L1AAP052 ----- CA-ASM2 EXTENDED APPLICATION MENU-----
COMMAND ===>

TYPE    ===> L      ( A : add, D : delete, L: list)      User = Userid
                                ( P : print, R : rsvp, B: backup) Time =
                                                                Date
                                                                Date = 96320

APPLICATION ===>      (ending with a * for generic)

Press Enter to continue, PF3 to save, PF1 for help

```

The entry panel for application definitions is displayed. Valid selections on this panel include:

- A** Add a new application to the table. If the specified new group name already exists, the mode is switched to update.
- B** Generate \$BK commands. All generated \$BK commands are placed in a queue and selected application.
- D** Delete a fully-named application definition.
- L** List a table, based on a full application or generic application name, specified by appending an * to a partially filled in application name.
- P** Print all information in the Application table.
- R** Invoke RSVP to check your defined applications against the cataloged files.

When selecting A, B, D or R you must specify the full application name or you can perform the same operations from the selection list (option L).

For types L and P you can enter a generic application name (ending with a *) or * to obtain all defined applications.

If you select L, an additional panel is displayed listing the defined applications. An example panel is shown next.

```
L1AAP054 ----- CA-ASM2 EXTENDED ----- Row 1 of 5
COMMAND ==>                               Scroll ==> DATA

CMD  APPLICATION (opt: Select, Del, Rsvp, Bkp) FILES
-----
ASM2
    ALL ASM2 DATASETS AND DIFFERENT IPCS
DEVL
    ASM2 AND UTILITIES                13
EMPTY
    SAMPLE TO FIND NO ENTRIES
ISPF
    MY TOP 10 LIBRARIES
RSVP
    TEST WITH DIFFERENT ENTRIES
***** Bottom of data *****
```

This panel allows you to perform the following:

- S** Select an application and enter update mode for the definitions.
- B** Generate \$BK requests.
- D** Delete an application.
- R** Invoke RSVP to check the definitions against the cataloged file.

Select one of the options or enter PF3 to return to the Application Menu.

When selecting type A from the Application Definition menu or S from the Application list the following panel is displayed. You are put in the add or update mode, depending on whether the application already exists.

```

LIAAP053 ----- CA-ASM2 EXTENDED APPLICATION ADD-UPDATE-----
COMMAND ==>
M500 ** Application DEVL exists, switch to update mode **

APPLICATION ==> DEVL                                User = Userid
                                                    Time = 07:10
                                                    Date = 17/08/96
                                                    Date = 96230
Comment ==> ASM2 AND UTILITIES

DSN(s) ==> Userid.DEVL.L1AA
        ==> Userid.DEVL.UTIL.-
        ==>
        ==>
        ==>
        ==>
        ==>
        ==>
        ==>

Files ==> 13      (number of files that MUST be selected in RESTORE phase)
                  (0 or blank means NO TEST)

Press Enter to continue PF3 to Quit

```

This panel allows you to specify up to 10 DSNs or masks that are part of a specified application. The length of these DSNs or masks cannot exceed 214 characters. A warning is issued if the entries are more than 214 characters in length. The RSVP pattern masking facility is utilized to specify the DSN masks. To increase performance, avoid specifying a mask that does not have at least one high-level qualifier.

If you selected the R option (invoke RSVP to check the definition against the cataloged files), at least one high-level qualifier must be entered.

The Files field (optional) can be used to select the exact number of files to be restored. This field is checked during the restore phase and compared to the actual number of selected files, and if not the same, a warning panel is displayed.

The Comment field allows you to enter additional text to be displayed when selecting an application for restore.

Press PF3 to go back to the menu without saving your updates, or press Enter to verify your updates and update the Application table.

After updating the Application table (this update was done in your ISPPROF to avoid contention with other users), the table must be moved back to an ISPTLIB data set where other users have access to it.

The Application table normally must be located in a shared table library that is accessible by all users that need to do application restores. This PDS must be concatenated in your logon procedure or CLIST under the ddname ISPTLIB.

Pressing Enter displays the following panel.

```
L1AAP056 ----- CA-ASM2 EXTENDED -----  
COMMAND ===>  
  
Move Application Definitions Back To An ISPTLIB  
  
We took the table from library:  
===> Userid.ISPF.ISPPROF  
  
We updated the table in:  
===> Userid.ISPF.ISPPROF  
  
We will move the new updated APPLICATION table to (change if needed):  
===> Userid.CAI.CAIISPT  
  
Press Enter to continue, PF3 to bypass COPY
```

During the initial retrieval of this table, an ISPTLIB data set name was set. At this time a new ISPTLIB data set name may be specified.

3.9.2 Option A2 - VSAM Exceptions Table Definition

For large VSAM files, the restore time can become a problem. Since the disk access for a VSAM restore is done by IDCAMS IMPORT, this utility in stand-alone mode gives the same poor performance for large VSAMs.

To avoid this problem, a special VSAM table that extracts the current buffer space during definition and calculates the optimal buffer space for restore is utilized. The two buffer space values are stored in this VSAM table and used during restore.

During a restore, the Delete/Define of the VSAM file is executed, followed by an IDCAMS ALTER to change the default buffer space to the calculated one. Once the restore is finished, IDCAMS ALTER is called again to change the buffer space back to the original.

Large VSAM files, certainly multi-volume ones, are good candidates for this option. In this case, CA-ASM2 tries, during a restore, to put the VSAM on the NEWVOL specified volume. If the specified volume does not have enough space to hold the file, the restore fails.

For multi-volume VSAM restores, where the NEWVOL parameter is NOT specified, CA-ASM2 restores the file on the original volumes.

When defining a VSAM file in the VSAM table along with the PDS and member where the Delete/Define statements are found, IDCAMS is called during the restore to generate the Delete/Define JCL.

Option A2 displays the following panel which shows the first ISPTLIB library containing the VSAM table (L1AAT006). If it also exists in your ISPPROF library, the results of a comparison of the update dates and times are shown.

After updating the VSAM table and before moving it from your ISPPROF library to your ISPTLIB library, the target library may be altered.

```
L1AAP083 ----- CA-ASM2 EXTENDED MESSAGE-----  
COMMAND ==>  
  
User = Userid  
Time = 12:17  
Date = 11/16/96  
Date = 96320  
  
VSAM EXCEPTIONS (multi-volume, keyranges...)  
  
TABLE ONLY EXIST IN YOUR Userid.ISPF.ISPPROF  
WE WILL UPDATE IN THIS LIB  
  
Press Enter to continue, PF3 command to goback
```

Press Enter to display the next panel.

```
L1AAP084 ----- CA-ASM2 EXTENDED VSAM MENU-----  
COMMAND ==>  
  
      TYPE  ==> L          ( A: add, D: delete, L: list)      User = Userid  
                        ( P: print, V: verify all)           Time =  
                                                                Date = 11  
                                                                Date = 96320  
  
      VSAM   ==> *                               (vsam or generic *)  
  
      Default PDS with Delete-Define members:  
      ==> Userid.ASM2.PARMLIB  
  
  
      Press Enter to continue, PF3 to save, PF1 for help
```

On this entry menu you can list all existing definitions. You may use a generic definition by ending the entered data set name with an *. You can also add or delete VSAM data sets by entering a full data set name (cluster name) in the VSAM field.

The default PDS name where Delete/Define statements are located is defined in the customization program L1AAXMOD. This PDS name can be changed from the default on the detail panel.

Option V (verify) allows you to generate a batch job that checks all defined VSAM data sets in the VSAM table, and updates the current buffer space and recalculates the optimal buffer space. The JCL to do this is displayed in edit mode, so that you can save, with the L1SAVE top line command, the JCL to a library of your choice for later execution.

The resulting display allows you to update or delete entries.

```
L1AAP086 ----- CA-ASM2 EXTENDED ----- ROW 1 FROM 8
COMMAND ==>                                Scroll ==> DATA

  CMD   VSAM      (options: S, D)                BUF old   new
-----
        Userid.ASM2.ASM2IPC                      12288   618501
        Userid.ASM2.ASM2JNL                       8196   614402
        Userid.ASM240.ASM2IPC                     18499   618499
        Userid.ASM240.ASM2JNL                     14402   614402
        Userid.ASM242.ASM2IPC                     12288   618499
        Userid.CACT.PROFILE                       9728   618499
        Userid.PROFILE.DATASET                     8899   208899
***** BOTTOM OF DATA *****
```

This list display is shown when you issue the L command on the entry menu. You can select (and switch to update) an existing entry, or you can delete an existing entry, with a confirmation panel.

Selecting an entry on the list display or selecting an A type from the entry menu displays the following panel.

```
L1AAP085----- CA-ASM2 EXTENDED VSAM ADD-UPDATE-----
COMMAND ==>
M400 ** VSAM Userid.ASM2.ASM2IPC exists, switch to update mode **
                                     User = Userid
VSAM   ==> Userid.ASM2.ASM2IPC                                     Time = 07:30
                                     Date = 17/08/96
                                     Date = 96230

Delete-Define can be found in:
==> Userid.ASM2.PARMLIB
Member:
==> IPCDEF
==> YES (Yes,No) (Edit Delete-Define)

Calculate Bufferspace: (file must be online if set to YES)
==> YES (Yes,No)

Manual Update of Bufferspace:
==> 12288      (original bufferspce)
==> 618501    (bufferspace to be used during restore)

Press Enter to continue  PF3 to Quit
```

This panel allows for the specification of the PDS name that contains the IDCAMS Delete/Define parameters for the specified VSAM data set. The VSAM data and index component names are automatically added to the table when in the add or update mode.

If the specified VSAM is not online, NO must be specified in the Calculate Bufferspace field. The manual update of the buffer space is only valid when the Calculate Bufferspace field is set to NO.

Pressing Enter places you in the edit mode for the specified member. If the specified member does not exist, an error message is displayed on the panel.

The edited Delete/Define may only contain statements that are valid in an IDCAMS SYSIN.

```

ISREDDE - Userid.ASM2.PARMLIB      - 01.04 ----- COLUMNS 001 072
COMMAND ==>                        SCROLL ==> PAGE
***** ***** TOP OF DATA *****
==MSG>
==MSG> M132 ** VERIFY IF THIS IS THE CORRECT DELETE - DEFINE **
==MSG>
000006 DELETE   Userid.ASM2.ASM2IPC PURGE CLUSTER
000007 SET MAXCC=0
000008 DEFINE   CLUSTER (
000009           NAME(Userid.ASM2.ASM2IPC)
000010           UNIQUE SPEED FREESPACE(10 10)
000011           CISZ(4096)
000012           RECORDSIZE(512 4089) KEYS(80 8)
000013           SHAREOPTIONS(3 3)
000014           )
000015 DATA (
000016           NAME(Userid.ASM2.ASM2IPC.DATA)
000017           CYLINDERS(30 5)
000018           VOLUME(CAI801 CAI802 CAI803)

```

After editing, press PF3 to save your optional updates, and to continue with the buffer space calculation.

When the update is performed (PF3 on the Edit Delete/Define panel) you are returned to the entry menu where you can continue with another add, list or delete.

```

L1AAP084 ----- CA-ASM2 EXTENDED VSAM MENU-----
COMMAND ==>
M404 ** TABLE UPDATED SUCCESSFULL **

TYPE   ==> L           ( A: add, D: delete, L: list)
                                ( P : print)
                                User = Userid
                                Time = 15:50
                                Date = 11/16/96
                                Date = 96320

VSAM   ==> Userid.ASM2.ASM2IPC           (vsam or generic *)

Default PDS with Delete/Define members:
==> Userid.ASM2.PARMLIB

Press Enter to continue, PF3 to save, PF1 for help

```

If you have no more updates, press PF3 to display the next panel.

```
L1AAP088 ----- CA-ASM2 EXTENDED TABLE COPY-----  
COMMAND ==>  
  
Move Vsam Definitions Back To An ISPTLIB  
  
Table moved from library:  
    ==> Userid.ISPF.ISPPROF  
  
Table updated in:  
    ==> Userid.ISPF.ISPPROF  
  
VSAM table will be moved to (change if necessary):  
    ==> Userid.ISPF.ISPPROF  
  
  
Press Enter to continue, PF3 to bypass COPY
```

This panel shows you where the table originated, where it was updated, and where it resides when it is moved back. You can change the target library if needed.

3.10 Full-Volume Restore and Incremental Recovery (Option B)

Selecting option B from the ASM2 Restore Selection Menu displays the following panel.

```

LIAAP091 ----- CA-ASM2 EXTENDED VOLUME MENU-----
COMMAND ==>

Recovery selection ==>                                User = Userid
                                                         Time = 07:56
                                                         Date = 15/08/96
                                                         Date = 96228
                                                         Opt = L

1 - Volume Restore
2 - Volume Recovery (Full Restore and Incremental Recovery)
3 - Volume Recovery (Full Restore, Incremental Recovery, Tape Optimization)

4 - Incremental Recovery (from a specific date and time)
5 - Incremental Recovery (from a specific date and time with Tape Optim.)

6 - (Mass) Tape Optimization (is included in option 3 and 5)
   (to process all SYSUT1/2 files from different option 2 and 4 runs)

L - List available Full Volumes with RSVP in Batch

IPC      ==> Userid.ASM2.ASM2IPC
Journal ==> Userid.ASM2.ASM2JNL

```

Note that the panel's options are divided into 4 groups based on the next panel to be displayed.

Selecting options 1, 2 or 3 displays the identical panel based on a full-volume restore. Other panels are then displayed based on the option selected.

Selecting options 4 or 5 displays the identical panel based on an incremental recovery. Other panels are then displayed based on the option selected.

Selecting option 6 displays a panel that can do tape optimization of a previous executed incremental recovery (options 2 or 4).

Be sure to delete the old work files before beginning a new set of restore(s). This is because tape optimization (option 6 only) does a generic lookup to find all existing work files, and combines them into one logical group.

Selecting option L uses RSVP to list all available full backups in your IPC.

The first three options are used to start from a CA-ASM2 full backup (that was taken in advance) to recover.

- Option 1 does only the full restore.
- Option 2 does the full-volume restore, followed by an incremental recovery.
- Option 3 performs the first two plus the optimization of the restore commands generated by the incremental recovery (tape optimization).

If you do not need to start from the full-volume restore, or if the volume restore was done outside CA-ASM2 control, use options 4 or 5.

- Option 4 does an incremental recovery, starting from a specific day and time.
- Option 5 performs option 4 plus the generated restore commands are intercepted and optimized by tape volser (tape optimization).

Option 6 is used when different (maximum 20) volumes are to be recovered. This utilizes up to 20 SYSUT2 files to contain all the generated \$RB commands and generates one job per tape.

Tape optimization creates a new table with all restore commands in it, and sorts this table by tape volser. It then generates all \$RB commands again, and creates one job for each tape that is used. The benefit of this is that you have as many jobs as you have tapes to mount. This means your restores do not require the same tape multiple times and that you can submit more jobs at the same time, obtaining a better throughput.

Options 3 and 5 include the tape optimization performed by option 6.

3.10.1 Options B1/2/3 Volume Restore/Recovery

Selecting options 1, 2 or 3 from the menu displays the following panel.

```
L1AAP040 ----- CA-ASM2 EXTENDED VOLUME RECOVER-----  
COMMAND ==>  
  
Enter volser for FULL Restore or Incremental Recovery      User = Userid  
                                                             Time = 15:00  
                                                             Date = 11/16/96  
                                                             Date = 96320  
                                                             Opt  = L  
VOLUME ==> SJ0004 (enter ? for Space Map of online volumes) or  
                  (enter * for ALL volumes with a Full Backup) or  
                  (enter FULL disk name)  
  
IPC      ==> Userid.ASM2.ASM2IPC  
Journal ==> Userid.ASM2.ASM2JNL  
  
Press Enter to continue, PF1 for help, PF3 to return
```

In the VOLUME field you can specify:

- A non-generic volume name
- * to give you a list of all volumes that have a full backup available. From this list you can select the volume to recover
- ? to allow you to select a volume from the online volume list

3.10.1.1 Volumes with an Available Full Backup

Selecting * in the VOLUME field displays the following panel.

```
L1AAP044 ----- CA-ASM2-EXTENDED ----- ROW 1 OF 83
COMMAND ==>                                     Scroll ==> DATA

S to display all available backups for the selected disk volser

CMD  DISK
---  -----
      SYSRS2
      SYSRS1
      MV9010
      MV9009
      MV8014
      MV8009
      MV8008
      MV8007
      MV8006
      MV8005
      MV8004
      MV8003
      MV8002
      MV8001
      MV8E01
      MV2XA4
      MV2XA3
```

This panel shows all volumes that have a full backup available.

Enter an S by the desired volume to display all available backups.

Selecting a volume on the selection panel displays the following panel.

```

L1AAP045 ----- CA-ASM2 EXTENDED ----- ROW 15 OF 83
COMMAND ==>                                Scroll ==> DATA

S to select a version for volser MV8008

CMD  Tape Datasetname                                BACKUP
    Unit   Tape Volumes                                Date    Time
---  -
CAI.ASM2400.$DEFRAG.MV8008.G0004V00                10-07-96  07:49
 3480      AS1531 AS1722 AS1055
CAI.ASM2400.$DEFRAG.MV8008.G0003V00                09-02-96  08:21
 3480      AS1568 AS1618 AS1677
CAI.ASM2400.$DEFRAG.MV8008.G0002V00                08-05-96  08:28
 3480      AS1547 AS1550 AS1479

***** BOTTOM OF DATA *****

```

On this detail panel you can select the desired full backup version that you want to restore. Information provided includes full tape data set name, backup date and time, unit type and all volsers needed.

PF3 returns you to the previous panel.

Once you select the version you want by entering an S before the version, an option panel is displayed which contains all information for the selected version, and common restore parameters.

Note: The Unit field is an internal IPC field that is translated upon execution by the values entered in your \$OPTIONx.

Selecting a backup version from the previous selection list allows you to enter optional \$DEFrag parameters as shown next.

```

L1AAP043 ----- CA-ASM2 EXTENDED RESTORE CRITERIA-----
COMMAND ==>

Enter Full Volume Restore Parameters for SJ0004

Tape DSN      ==> ASM2.BKUP.DEFRAG.MSTR
Tape UNIT     ==> 3420
Backup Date   ==> 01-31-96
Backup Time   ==> 19:30
Tape Volsers  ==> ASF081

Parameters:

Compress      ==> N      (Y,N)   NEWVOL      ==>      (? for volume list)
Test          ==> N      RENVVDS     ==> N      (Y,N)
Reindex       ==> N      RENVTOCIX  ==> N      (Y,N)

                                Relabel your NEWVOL to SJ0004
                                ==> N      (Y,N)

Press Enter to continue, PF1 for help, PF3 to return

```

After entering any optional parameters, pressing Enter generates the JCL in edit mode. If you want to run the full restore, you must submit it.

On each of these panels you can stop processing by entering PF3. This returns you to the higher level panel.

The volser entered for NEWVOL is checked for availability. To obtain an online volume map of all volsers, enter ? in this field.

The fields RENVVDS and RENVTOCIX are only valid if you entered a new volume name in the NEWVOL field.

If you want to relabel the target volume after the full restore to the original volume name, you can set the Relabel field to Y. This generates an ICKDSF step to perform this operation.

If you selected Option B1 (Full-Volume Restore only) you receive the JCL, which must be submitted.

After submitting the JCL for option B1, or if you selected option B2 or B3, the following panel is displayed.

```

L1AAP096 ----- CA-ASM2 EXTENDED TAPE OPTIMIZATION-----
COMMAND ==>

Tape Optimization (1 job per tape)                                User = Userid
                                                                Time = 16:05
                                                                Date = 11/16/96
                                                                Date = 96320
                                                                Opt  = L

Input Dsname prefix (don't specify the last level Vdisk)
SYSUTx output from Incremental Recovery Jobs)
    ==> Userid.ASM2.RECOVERY.SYSUT1                                *
    ==> Userid.ASM2.RECOVERY.SYSUT2                                *
        (will be appended with VSJ0004 )

Optimized output dsname mask:
    ==>                                                            *

Unit for new files:
    ==> SYSDA

The * indicated files MUST be submitted afterwards

Press Enter to continue, PF1 for help, PF3 to return

```

The Incremental Recovery job writes all of its restore commands in two files:

- SYSUT1 for the restore commands of all catalogs on the recovered volume
- SYSUT2 for all other restore commands

Enter only the prefix that is used for those files. The application will add after your specified prefix the level V + the volser of the specified disk.

The requested UNIT name is the unit name that the incremental recovery job can use to write the SYSUT1 and SYSUT2 files on.

If you requested option B3 (indicating that you wanted tape optimization), there is an additional field on this panel, requesting a data set name where the tape optimization output must be written into. This must be a non-existing data set name. It contains different jobs one after another, depending on the number of tapes that are used.

3.10.2 Options B4/5 - Incremental Recovery Only

Selecting either option 4 or 5 displays the following panel.

```

L1AAP092 ----- CA-ASM2 EXTENDED RECOVERY CRITERIA-----
COMMAND ==>

Enter volser for Incremental Recovery                                User = Userid
                                                                    Time = 14:10
                                                                    Date = 11/16/96
                                                                    Date = 96320
                                                                    Opt = L

VOLUME ==> SJ0004 (enter Full Disk name)
                    (or * to show all volumes with an Incremental Backup)
                    (or part of the volser name, without ending wildcard)

From
  Date ==> 96289 (yyddd)
  Time ==> 19:30 (hh:mm)

Optionally, recover to another volume: (other than SJ0004)
Newvol ==>

IPC ==> Userid.ASM2.ASM2IPC
Journal ==> Userid.ASM2.ASM2JNL

Press Enter to continue, PF1 for help, PF3 to return

```

This panel allows you to initiate an incremental recovery without the need of a full restore.

You must enter a 6-character volume name, or you can enter an * to obtain a list from the IPC of all volumes that have an available incremental backup.

Optionally, you can also enter the Julian date (yyddd) and the time (hh:mm) from which CA-ASM2 is to search the IPC to find files that have been backed up. This date and time are filled in automatically when you select a version from the volume display list. You can obtain a volume list by entering a volume name or * and for a list of all available full volumes, backup leaving date and time blank.

Optionally, you can also enter a new volume to restore to. This results in \$RB commands generated with the parameter NEWVOL(vvvvvv).

Pressing Enter displays one of two panels based on whether option 4 or 5 was selected.

If option 4 was selected, the following panel is displayed.

```

L1AAP096 ----- CA-ASM2 EXTENDED TAPE OPTIMIZATION-----
COMMAND ==>

Tape Optimization (1 job per used tape)                User = Userid
                                                        Time = 16:05
                                                        Date = 11/16/96
Examine only Incremental Backups:                      Date = 96320
  ==> No   (Yes,No)                                     Opt  = L

Output dsname mask:
  ==> Userid.ASM2.RECOVERY.SYSUT1                      *
  ==> Userid.ASM2.RECOVERY.SYSUT2                      *
      (will be appended with VSJ0004 )

Unit for new files:
  ==> SYSDA

The * indicated files MUST be submitted afterwards

Press Enter to continue, PF1 for help, PF3 to return

```

On this panel you must enter the file names to be used and generated by the incremental recovery job.

The output prefix is needed to store all \$RB commands for catalogs and all other files. It is appended by V and the volser. The unit name must be a valid unit name (on disk) where these 2 files can be created.

The Examine only Incremental Backups field set to YES generates the parameter \$EXPBKUP OFF; meaning that explicit backups are **not** included in the search for the most recent version of a file.

If you do your recovery onsite where all your tapes are available, NO would be an appropriate entry for this field.

If option 5 was selected, the following panel is displayed.

```
L1AAP096 ----- CA-ASM2 EXTENDED TAPE OPTIMIZATION-----
COMMAND ==>

Incremental Recovery for SJ0004                                User = Userid
(from 96289 19:30)                                             Time = 16:05
                                                                Date = 11/16/96
                                                                Date = 96320
                                                                Opt  = L

Output dsname mask:
==> Userid.ASM2.RECOVERY.SYSUT1                                *
==> Userid.ASM2.RECOVERY.SYSUT2
    (will be appended with VSJ0004 )

Optimized output dsname mask:
==> Userid.ASM2.RECOVERY.IDEAL                                *

Unit for new files:
==> SYSDA

The * indicated files MUST be submitted afterwards

Press Enter to continue, PF1 for help, PF3 to return
```

The optimized output dsname mask field is a sequential file that contains a reformatted version of the commands found in the SYSUT2 file of the incremental recovery.

All commands generated in SYSUT2 are read and an ISPF table is generated with all commands in it. The ISPF table is then sorted on tape volser and all \$RB commands are again regenerated. This time a job card and the needed JCL is generated with it. A new job card is generated each time a tape switch is encountered.

The result is that you have as many jobs in your formatted output as you need different tapes. The advantage is that you only need to mount each tape once (except for files that span 2 or more tapes) and that you can submit more than one recovery job at the same time.

3.10.3 Option B6 - Tape Optimization

```

L1AAP096 ----- CA-ASM2 EXTENDED TAPE OPTIMIZATION-----
COMMAND ==>

Tape Optimization (1 job per used tape)                                User = Userid
                                                                           Time = 16:10
                                                                           Date = 11/16/96
                                                                           Date = 96320
                                                                           Opt  = L

Input Dsname prefix (don't specify the last level Vdisk)
(SYSUT2 output from Incremental Recovery Jobs)
==> Userid.DEVL.ASM2.$INCRVR.SYSUT2

Optimized output dsname mask:
==> Userid.ASM2.RECOVERY.IDEAL                                         *

Unit for new files:
==> SYSDA

The * indicated files MUST be submitted afterwards

Press Enter to continue, PF1 for help, PF3 to return

```

If you need to execute more than one incremental recovery job (more than one volume), it is more efficient to execute option 4 (Incremental Recovery without tape optimization) for each volume. This generates a SYSUT1.V volser and SYSUT2.V volser file for each requested volume.

The SYSUT1.V volser files are all \$RB commands for your catalogs, and must be executed manually.

Option 6 can take all SYSUT2.V volser files (up to 20) and generate a formatted and optimized new output file with a separate job for each required tape.

You must specify the prefix of the SYSUT1 file that you indicated in the incremental recovery. A REXX procedure searches for all occurrences and use them as input. Make sure before starting that you do not have old versions of these files on disk.

You must also specify the data set name for the formatted output data set name and unit name where this file can be created.

Press Enter to display the associated JCL. All occurrences of your SYSUT2 files are searched and a batch job generated that reformats the SYSUT file and generate a formatted and optimized output. This JCL must be submitted manually.

When the job has finished, you must manually submit the file created and allocated under ddname ISPFIL (this is the filename you specified on a previous panel to contain the optimized output). This file contains multiple jobs, one after another, one job per user tape.

3.10 Full-Volume Restore and Incremental Recovery (Option B)

```
ISREDDE - Userid.SPFTMP2.CNTL ----- COLUMNS 001 072
COMMAND ==>                                SCROLL ==> PAGE
***** ***** TOP OF DATA *****
==MSG>
==MSG> M140 ** TAPE OPTIMIZATION FOR INCREMENTAL RECOVERY **
==MSG>
000001 //UseridB JOB 90600000L.Username...,
000002 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000003 //JOBLIB DD DSN=Userid.ASM2.CAILIB,
000004 //      DISP=SHR
000005 //*-----*
000006 //*
000007 //*      ASM2 PANELS : TAPE OPTIMIZATION FOR INCREMENTAL RECOVERY
000008 //*                      : BY Userid AT 96/01/20 (96.120) 10:27
000009 //*
000010 //*-----*
000011 //**
000012 //** DELETE WORK FILES (IN CASE THAT...)
000013 //**-----*
000014 //ST010 EXEC PGM=IDCAMS
000015 //SYSPRINT DD SYSOUT=*
000016 //SYSIN DD *
000017 DELETE Userid.ASM2.RECOVERY.IDEAL
000018 SET MAXCC = 0
000019 /*
000020 //**-----*
000021 //** ALLOCATE THE WORK FILE FOR ALL RESTORE JOBS
000022 //**-----*
000023 //ST020 EXEC PGM=IEFBR14
000024 //ALL1 DD DISP=(,CATLG),
000025 //      DSN=Userid.ASM2.RECOVERY.IDEAL,
000026 //      UNIT=SYSDA,SPACE=(CYL,(1,1)),
000027 //      DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440,DSORG=PS)
000028 //*
000029 //**-----*
000030 //** BATCH EXEC OF L1AAC023 (1 JOB PER TAPE) TAPE OPTIMIZATION
000031 //**-----*
000032 //S040 EXEC ASM2REXX
000033 //INPUT DD DISP=SHR,
000034 //      DSN=Userid.DEVL.ASM2.$INCRVR.SYSUT2.VCAI800
000035 //      DD DISP=SHR,
000036 //      DSN=Userid.DEVL.ASM2.$INCRVR.SYSUT2.VCAI801
000037 //      DD DISP=SHR,
000038 //      DSN=Userid.DEVL.ASM2.$INCRVR.SYSUT2.VSJ0004
000039 //      DD DISP=MOD,
000040 //      DSN=Userid.ASM2.RECOVERY.IDEAL
000041 //SYSTSIN DD *
000042 //      PROFILE PREFIX(Userid)
000043 //      ISPSTART CMD(%L1AAC023)
000044 /*
000045 //*-----*
000046 //*
000047 //* -- SEND MESSAGE THAT ALL IS OK
000048 //*
000049 //*-----*
```


3.11 Cross-Reference Menu (Option C)

Selecting option C from the ASM2 Restore Selection Menu displays the following panel.

```
L1AAP069----- CA-ASM2 EXTENDED CROSS REFERENCE-----  
COMMAND  ===>  
  
Cross References                                     User = Userid  
                                                    Time = 15:30  
Execution selection ===>                           Date = 11/16/96  
                                                    Date = 96320  
  
Online execution  
  
1 - Cross Reference: Online volumes <-> DEFrag Full Volume backups  
2 - Cross Reference: Online volumes <-> Incremental backups  
3 - Cross Reference: Online volumes <-> Full and Incremental backups  
  
Batch execution  
  
4 - Cross Reference: Online volumes <-> DEFrag Full Volume backups  
5 - Cross Reference: Online volumes <-> Incremental backups  
6 - Cross Reference: Online volumes <-> Full and Incremental backups  
  
Press Enter to continue, PF1 for help, PF3 end
```

This panel provides the ability to obtain a cross-reference of online volumes to CA-ASM2 incremental backups and full-volume backups.

Selecting options 1, 2 or 3 displays a list of files that can be sorted and printed.

Selecting options 4, 5 or 6 displays JCL to be submitted manually and that can be saved to a scheduling solution.

3.11.1 Options C1/C2

Selecting either 1 or 2 displays the following panel. Entering SRT on the command line presents you with sorting options for sorting the list. Entering PRT on the command line presents you with a panel to print the list.

L1AAP070 ----- CA-ASM2 EXTENDED -----				Row 1 to 17 of 81	
COMMAND ==>				Scroll ==> DATA	
VOLSER	CUU	STATUS	IPCDATE	IPCTIME	REMARKS
-----	---	-----	-----	-----	-----
JESSP1	300	PRIVATE			*** NO FULL ***
MP8003	301	PRIVATE	09-01-96	08:12	
MVXA02	302	PRIVATE			*** NO FULL ***
MVXA01	303	PRIVATE	08-03-96	08:33	
MV8002	304	PRIVATE	08-03-96	08:00	
WRK003	305	PUBLIC			*** NO FULL ***
MV8003	306	PRIVATE	08-03-96	08:11	
MV8004	307	PRIVATE	08-03-96	08:24	
MV8005	308	STORAGE	09-01-96	07:32	
MV8006	309	STORAGE	09-01-96	07:42	
MV8007	30A	STORAGE	10-07-96	07:34	
MV8008	30B	STORAGE	10-07-96	07:49	
MV8E01	30C	PRIVATE	10-07-96	08:31	
MP8E03	30D	PRIVATE	10-02-96	08:40	
MP8E02	30E	PRIVATE	09-01-96	07:53	
MP8E01	30F	PRIVATE	10-02-96	09:21	
SYSRS2	310	PRIVATE	09-09-96	07:45	
MV2XA1	311	PRIVATE	10-21-96	08:14	
MV2XA2	312	PRIVATE	10-21-96	08:30	

Option 1 creates a list of all online volsers in your company that are available and have a full backup available. If no full backup is available for one of the volsers, a special comment is displayed.

Option 2 does the same operation as option 1, but is done for incremental backups.

The decision to check if an incremental backup is available is done based on the existence of the file SYS1.VTOC.Vvolser. This file is normally only taken by the incremental backup procedure. Sites that back up these files using explicit backup runs cannot use this cross-reference option to know if incremental backups are taken or not, because it does not reflect the exact conditions. The first 3 fields (VOLSER, CUU and Status) are obtained from the online volumes. The 2 other fields (IPC date and time) are fields that are obtained from the CA-ASM2 catalog. They indicate the date and time of the last available backup. If these 2 fields are blank, it indicates there is no full-volume backup available for the volume.

3.11.2 Option C3

Selecting option 3 displays the following panel. Entering SRT on the command line presents you with sorting options to sort the list. Entering PRT on the command line presents you with a panel to print the list.

```

L1AAP078 ----- CA-ASM2 EXTENDED ----- ROW 1 OF 61
COMMAND ===>                               Scroll ==> DATA

VOLSER  CUU  STATUS  FULL date time  INCR date time
-----  ---  -
JESSP1  300  PRIVATE
MP8003  301  PRIVATE  01-05-96 08:39  01-07-96 16:52
MVXA02  302  PRIVATE  01-07-96 10:14
MVXA01  303  PRIVATE  01-06-96 08:43
MV8002  304  PRIVATE  01-06-96 07:52  01-07-96 16:52
WRK003  305  PUBLIC
MV8003  306  PRIVATE  01-06-96 08:04  01-07-96 16:52
MV8004  307  PRIVATE  01-06-96 08:29  01-07-96 16:52
MV8005  308  STORAGE  01-05-96 07:32  01-07-96 16:52
MV8006  309  STORAGE  01-05-96 07:43  01-07-96 16:52
MV8007  30A  STORAGE  01-06-96 12:58  01-07-96 16:52
MV8008  30B  STORAGE  01-06-96 13:12  01-07-96 16:52
MV8E01  30C  PRIVATE  01-06-96 13:53  01-07-96 16:52
MP8E03  30D  PRIVATE  11-06-96 08:13  01-07-96 16:52
MP8E02  30E  PRIVATE  01-05-96 07:56  01-07-96 16:52
MP8E01  30F  PRIVATE  11-06-96 08:35  01-07-96 16:52
SYSRS2  310  PRIVATE
MV2XA1  311  PRIVATE  12-30-96 09:18

```

This is a combination of options 1 and 2, resulting in a list of all online volumes in your company, with an indication of the latest full and incremental backup available (date and time), or blanks if no backup is available for a volume.

3.11.3 Options C4/C5/C6

These three options are the batch versions of the backup verification. The goal of the batch version is that you can save the JCL into your scheduling solution for an automatic execution. You can use the top line command L1SAVE to save the generated JCL to a library of your choice. You are presented a panel where you can enter the target PDS and member.

3.12 Load Alternate/Recheck User Options and Security (Option D)

Selecting option D from the ASM2 Restore Selection Menu displays the following panel.

```
L1AAP100----- CA-ASM2 EXTENDED OPTION REFRESH-----  
COMMAND ==>  
  
Change your current options  
  
New suffix ==> L  
  
User = Userid  
Time = 16:15  
Date = 11/16/96  
Date = 96320  
  
Press Enter to continue, PF3 to cancel request
```

This panel is used to change the suffix of an \$OPTIONx module where x is the suffix. Authority levels other than SYST and OPER do not receive a panel, but it directly refreshes the allocated \$OPTION and L1AAXMOD modules.

This is used by the CA-ASM2 administrator to test an alternate set of options.

3.13 Backup, Recovery and Reporting (Option E)

Selecting option E from the ASM2 Restore Selection Menu displays the following panel.

```

LIAAP079 ----- CA-ASM2 EXTENDED IPC JOBS MENU-----
COMMAND ==>

IPC jobs                                     User = Userid
                                           Time = 07:57
IPC job selection ==>                     Date = 15/08/96
                                           Date = 96228
                                           Opt = L

0 - Necessary parameters for the following job options
1 - Backup IPC and Journal
2 - Restore IPC (with Delete - Define - REPRO)
3 - Restore IPC (with IMPORT)
4 - Restore and Recover IPC with forward recovery from version 0
5 - Restore and Recover IPC with forward recovery from version -1
6 - Redefine and Initialize your current JOURNAL
7 - Reorganize IPC (Repro - Delete/Define - Repro)

A - ASM2MNT (free expired tapes and files, LOUSER and TAPE check)
B - RSVP Reporting
F - Forward Merge Selection
M - Member Backup                      IPC ==> Userid.ASM2.ASM2IPC
S - IPC Statistics                     JNL ==> Userid.ASM2.ASM2JNL

Press Enter to continue, PF1 for help, PF3 end

```

This panel allows you to select IPC maintenance jobs.

The IPC and Journal need to be backed up on a regular basis. It is best to have various types of backups of the IPC and Journal which is why you are provided with both the standard ASM2BKUP step and an IDCAMS REPRO and EXPORT step.

On a regular basis the ASM2MNT (maintenance) job must be run to ensure that the expired tapes are freed from CA-ASM2 (and tape management). Optionally at this time a verification that no free tapes exist in the LOxxx files (up to 40 for each type) and that no discrepancy on CA-ASM2 tapes exists between CA-ASM2 and the tape management system can be done.

3.13.1 Option E0 - IPC Job Parameters

Selecting option E from the ASM2 Restore Menu and then selecting option 0 displays the following panel.

```

L1AAP080 ----- CA-ASM2 EXTENDED IPC JOBS PARAMETER-----
COMMAND ==>

Enter details for IPC backup and restore jobs

Backup unit ==> SYSDA          (unit name)
Tape - disk ==> DISK          (if it's TAPE or DISK)
Space (cyl) ==> 5             (needed if on DISK)

The output of MAINT will be put on Disk in:
==> Userid.ASM2.$MNT.SYSPRINT

Forward Merge will put all it's output in datasets
prefix ==> FMDSN
Unit name ==> YUNIT          (used when creating the data set)

Dummy DSCB ==> Userid.ASM2.DSCB
unit ==> volser ==>

Press Enter to continue

```

Before selecting any of the other options associated with Option E, parameters in option 0 must be filled in. These parameters are needed for JCL generation in the other options.

Field Descriptions

Backup unit	The unit name of the device that the IPC and Journal are to be backed up on.
Tape - disk	The type of device, either tape or disk, used to back up the IPC and Journal. Tape should be specified for both reel and cartridge tapes.
Space (cyl)	The number of cylinders that the backup can utilize on the specified disk unit. When tape is specified this is not needed.
Dummy DSCB unit	The unit name of where a dummy DSCB can be created.
VOLSER	Optionally, the name of the volser where a dummy DSCB can be created.

All other fields on this panel are from the L1AAXMOD customization program. If any of these fields are in error, correct the program, reassemble, relinkedit and select option D from the ASM2 Main Menu (refresh option).

The output of the backup steps are written as GDGs. The GDG names and number of versions to keep are defined in L1AAXMOD.

GDGs entered on this panel are verified to see if they are defined. If not, JCL is generated to define the GDG base.

3.13.2 Option E1 : Backup IPC and Journal

Before generating the backup JCL, the number of extents and VSAM splits that your current IPC has are verified.

If the default values are exceeded, this is shown on the statistics panel and would result in having a return code 4 in the standard CA-ASM2 backup step.

```

L1AAP102 ----- CA-ASM2 EXTENDED IPC STATISTICS-----
COMMAND ==>

IPC Backup                                     User = Userid
                                              Time = 16:25
                                              Date = 11/16/96
                                              Date = 96320

Allocated Tracks    ==> 1960
Used Tracks         ==> 1875
Percent Used        ==> 96
Extents             ==> 5

CI-Splits           ==> 0
CA-Splits           ==> 0

Creation Date       ==> 1996.075
Volser(s)           ==> ASM002
Record Total        ==> 98476

IPC                 ==> Userid.L1AA.ASM2IPC

Defaults are exceeded, ASM2BKP will receive a condition code 4

Press Enter to continue

```

The next panel puts you in edit mode for the backup JCL so that you can save this JCL in your scheduling solution.

3.13.3 Option E2 - Restore IPC with REPRO

The JCL is generated with the GDG name defined in L1AAXMOD, and used in the backup JCL (option E1).

Before showing the JCL, the Delete/Define statements of your IPC are edited to be used in the restore job.

Note: This option does not recover all transactions done after your latest backup. (Option E4 can do the restore AND recovery.)

3.13.4 Option E3 - Restore IPC with IMPORT

The JCL is generated with the GDG name defined in L1AAXMOD, and used in the backup JCL (option E1).

Note: This option does not recover all transactions done after your latest backup. (option E4 can do the restore AND recovery)

3.13.5 Option E4 - Restore and Recover IPC from Version 0

If you have lost your IPC, you need this restore option (NOT option 2 or 3) to restore your IPC and recover all transactions done after the last backup (from the Journal).

Since a Delete/Define of your IPC is performed in this recovery process, these statements are edited for verification or modification.

3.13.6 Option E5 : Restore and Recover IPC from Version -1

If your last IPC backup tape is unusable, you can use the previous version with this option.

Since a Delete/Define of your IPC is done in this recovery process, these statements are edited for verification or modification.

3.13.7 Option E6 - Journal Allocation and Initialization

If you need to increase the Journal allocation, or if you have lost your Journal, you can use this option to allocate and initialize a new Journal.

You are presented with the Delete/Define statements that are used so they can be modified where needed.

It is strongly recommended that you perform an IPC backup after this operation.

3.13.8 Option E7: IPC Reorganization

This option is used to increase the IPC's allocation, or if the IPC has many VSAM splits.

Before the JCL is generated, the number of extents and VSAM splits are verified. The results are displayed on the following panel.

```
L1AAP101 ----- CA-ASM2 EXTENDED IPC STATISTICS-----  
COMMAND ==>  
  
    IPC Reorganization  
  
    Allocated Tracks    ==> 1960  
    Used Tracks        ==> 1875  
    Percent Used       ==> 96  
    Extents            ==> 5  
  
    CI-Splits          ==> 0  
    CA-Splits          ==> 0  
  
    Creation Date       ==> 1996.075  
    Volser(s)          ==> ASM002  
    Record Total        ==> 98476  
  
    IPC                ==> Userid.L1AA.ASM2IPC  
  
    User = Userid  
    Time = 16:20  
    Date = 11/16/96  
    Date = 96320  
  
    Press Enter to continue
```

You must edit the Delete/Define statements that are used in the reorganization on this panel. After editing the generated JCL, it must be submitted manually.

3.13.9 Option EA - CA-ASM2 Maintenance

The CA-ASM2 maintenance job is to be scheduled on a regular basis as this is the only way that CA-ASM2 expires backup or archive data sets. If all files from a cartridge are expired, the tape is removed from CA-ASM2 and your tape management system.

```

L1AAP107 ----- CA-ASM2 EXTENDED $MAINT PARAMETERS-----
COMMAND ==>

Enter the following $MAINT options:                                User = Userid
                                                                    Time = 07:57
Simulate    ==> NO      (Yes,No)                                Date = 15/08/96
Tape check  ==> YES    (Yes,No)                                Date = 96228

Optional:

$PURGETP (delete all references for this tape in ASM2 and Tape Mgt)
    ==>
    ==>

$CHNGSER (change pointers to another tape in ASM2)
    ==> (original volume)
    ==> (new volume to point to)
    ==> (unit name of the new volume)

Press Enter to continue PF3 to Quit

```

This option generates the standard maintenance JCL, but depending on the options you select on this panel, various integrity checks are provided.

Field Descriptions

Simulate	Select the simulate mode for the maintenance job, and also for the optional integrity checks.
Tape check	Yes specifies to display another panel to indicate which integrity checks are to be performed. You must have CA-1 or CA-TLMS to perform these integrity checks.
\$PURGETP	Enter up to four volsers that you want to remove from CA-ASM2 and your tape management system.
\$CHGSER	Allows you to switch all IPC pointers from a master tape to the duplex copy.

The different integrity checks are based on the output listing that is written as a GDG. A REXX procedure reads this output and extract:

- all available volsers
- all volsers that are deleted this run

Another step executes a CA-Earl procedure (CATEARL for CA-TLMS and CA1EARL for CA-1) that lists all CA-ASM2 tapes known by your tape management.

When Tape check is set to YES the following is checked:

- Each tape known to CA-ASM2 is checked to see if it is also known to your tape manager. If not, a \$PURGETP command is generated in a sequential file for later execution (manual intervention).
- Each tape known to your tape manager is checked to see if it is also known to CA-ASM2. If not, the corresponding scratch or expire commands are generated in a sequential file for later execution.

Tape check being set to Yes also displays the following panel.

```

L1AAP131 ----- CA-ASM2 EXTENDED $MAINT PARAMETERS-----
COMMAND ==>

Enter the following $MAINT options:                                User = Userid
(you selected Tape Management Checking)                          Time = 07:57
                                                                    Date = 15/08/96
                                                                    Date = 96228

LOxxx check ==> NO      (Yes,No)
Archive test ==> YES    (Yes,No)
Tape Mgt.   ==> CA1     (CA1,TLMS) ==> YES  (CA1 5.1 or higher, Yes,No)
Verbose     ==> YES    (Yes,No)
Bypass the 'Tape Totals' check ==> NO      (Yes,No)

Specify the tape datasetname prefixes for ASM2 tapes
====> ASM2                (ASM2 tape prefix)
====> ASM2.DAILY          (ASM2 Full Backup prefix 1)
====> ASM2.WEEKLY         (ASM2 Full Backup prefix 2)
====>                    (ASM2 Full Backup prefix 3)
====>                    (ASM2 Full Backup prefix 4)
====>                    (ASM2 Full Backup prefix 5)
====>                    (ASM2 Full Backup prefix 6)
====>                    (ASM2 Full Backup prefix 7)

Press Enter to continue PF3 to Quit

```

Field Descriptions

LOxxx check	<p>Yes specifies to search up to 40 of your online LOxxx files and read the contents. If it contains the word SCRTCH it is discarded. If it contains a volser, the following is checked:</p> <ul style="list-style-type: none">■ If the LOxxx volser was deleted in the current run of the maintenance job. If yes, the volser is replaced by SCRTCH if not running in simulate mode.■ If the volser is still known to tape management. If not, this volser is also labled SCRTCH.
Archive test	<p>Specifying YES performs a check on the following.</p> <ul style="list-style-type: none">■ Checks to ensure each master tape has a valid duplex. If not, a message is displayed in the output listing.■ Checks if any master tape has more than 1 duplex tape. If so, the corresponding message is displayed in the output listing.■ Checks for duplex tapes that have NO valid master. If any are found, the corresponding scratch or expire command is generated in a sequential file.
Tape Mgt.	<p>Specifies if you have CA1 or TLMS. If you are running CA-1, indicate if you use version 5.1 or higher (YES).</p>
Verbose	<p>Yes specifies to display additional comments in the output listing.</p>
Bypass the 'Tape Totals' check	<p>Normally, protection against errors is included and processing stops under the following conditions.</p> <ul style="list-style-type: none">■ The CA-Earl listing contains no tapes■ The CA-ASM2 maintenance output contains no tapes■ The run date of the maintenance job is not today's date■ There is more than 50% difference in the number of tapes between CA-ASM2 and your tape management <p>When this field is set to yes, the final two checks in the above list are not performed.</p>
Datasetname prefixes	<p>To run the CA-Earl report you must supply your various CA-ASM2 prefixes. The standard prefix is ASM2 for all your normal backups and archives. Since the full backups can be a GDG, you can specify up to 7 different prefixes that are searched in your tape management.</p>

Once you generate the JCL, you can save this to your scheduling solution for execution.

3.13.9.1 Tape Check Output: LOXXX Check

```
We are running in simulation mode, no updates are done
-----
LO files with volser found in that file
-----
Userid..ASM2.ARCH.LOPERM SCRTCH
Userid..ASM2.ARCH.LOSYS SCRTCH
Userid..ASM2.ARCH.LOUSER SCRTCH
Userid..ASM2.BKUP.LOSYS SCRTCH
Userid..ASM2.BKUP.LOUSER 111111
Userid..ASM2.BKUP.DEFRAG.LOUSER SCRTCH
-----

In the listing of $MAINT we found 2 tapes to be freed
-----

vol 1 : ASF058
vol 2 : 333333
-----

111111 saved for checking in Tape Management in next step

No updates to LO... files needed
-----
```

If the \$MAINT or \$PURGETP command deleted a tape that was still active in one of the LOXXX files, this test updates the LOxxx file with the word SCRTCH.

In the above example, volser 111111 was found in one of the LOxxx files. This tape is checked later to see if it is still known to tape management.

In the \$MAINT output, two tapes were found to be purged (ASF058 and 333333). These tapes were verified that they are not in the current LOxxx files.

3.13.9.2 Tape Check Output: General Results

```
Tape Management CA1 is selected

*****
Rundate of $MAINT is DD/MM/YY 9:42:39
BUT: today its DD/MM/YY

Please check that this is the most recent
output of $MAINT..
*****

Totals from $MAINT listing
-----

Total number of tapes : 71

  number of BKUP tapes : 32
  number of ARCH tapes : 18
  number of A/B tapes  : 1
  number of FULL tapes : 20

Totals from Tape Management listing
-----

Total number of tapes : 81

  number of BKUP tapes : 29
  number of ARCH tapes : 12
  number of FULL tapes : 0
  (ASM2 names)
  number of FULL tapes : 36
  (NON-ASM2 names)
  number of BKUP DUPLEX : 0
  number of ARCH DUPLEX : 4
  number of FULL DUPLEX : 0

  other ASM2 tapes      : 0
```

This part of the check listing shows the results of the \$MAINT and CA-Earl listing.

In the example it can be determined that:

- CA-ASM2 knows 71 tapes, but tape management knows 81 CA-ASM2 tapes.
- It is normal to have a difference of 4 because these are archive DUPLEX tapes, and thus not in the CA-ASM2 catalog.

3.13.9.3 Tape Check Output: Test 1

```

TEST 1: ASM2 tapes against Tape Management Tapes
-----

*** ASM2 volser  ASH026  is ok in tape mgt
*** ASM2 volser  ASH062  is ok in tape mgt
*** ASM2 volser  001911  is ok in tape mgt
ASM2 volser  006148  is not known in Tape Management $PURGETP generated
ASM2 volser  007573  is not known in Tape Management $PURGETP generated

```

Based on the tape list of \$MAINT and the output of a CA-Earl report that was created in a previous step, each CA-ASM2 tape is checked to ensure it is still known to your tape management system. If a CA-ASM2 tape is found that is not known anymore, a \$PURGETP command is generated. These commands are generated in prefix.\$MNT.\$PURGETP. These generated \$PURGETP commands must be added in your next maintenance run.

3.13.9.4 Tape Check Output: Test 2

```

TEST 2: Tape Management Tapes against ASM2 Tapes
-----

*** Tape mgt volser  ASH026  is ok
*** Tape mgt volser  ASH062  is ok
*** Tape mgt volser  ASH064  is ok
Tape Mgt volser  B80038  is not known in ASM2 SCRATCH generated
Tape Mgt volser  B80130  is not known in ASM2 SCRATCH generated
*** Tape mgt volser  001911  is ok
volser  100000  is a  ASM2.ARCH.DUPE.TASH062
volser  100001  is a  ASM2.ARCH.DUPE.TASH062

```

Based on the tape list of CA-Earl from your tape management system, each CA-ASM2 tape is checked to ensure that it is still known to your tape management system.

If a CA-ASM2 tape is found that is not known anymore, a CA-1 or TLMS scratch command is generated to scratch this tape. These commands are generated in prefix.\$MNT.TAPEUPD and may be executed at a later time.

3.13.9.5 Tape Check Output: Test 3

```
TEST 3: Has each ASM2.ARCH.MASTER a duplex in Tape management
-----

*** Archive volser ASH062 has a duplex
Archive master ASH064 has no DUPLEX copy MAKE a duplex copy with $COPYTP
```

This check validates if each master tape has a duplex tape. If an archive tape is found without a duplex, a message is issued similar to the one shown above. You then have the option of making a copy with \$COPYTP.

3.13.9.6 Tape Check Output: Test 4

```
TEST 4: Has each DUPLEX still a MASTER tape
-----

*** duplex vol 100000 has a valid master ASH062 in ASM2
*** duplex vol 100001 has a valid master ASH062 in ASM2
*** duplex vol 100002 has a valid master ASH062 in ASM2
*** duplex vol 100003 has a valid master ASH062 in ASM2
```

Based on the list of all duplexes (from tape management) it is ensured that there is still a master tape available. If not, a SCRATCH update for your tape management is generated.

These scratch commands are added with the commands generated by test 2 in file prefix.\$MNT.TAPEUPD.

3.13.9.7 Tape Check Output: Test 5

```
TEST 5: Is there more than 1 DUPLEX for a MASTER
-----
100001 is an old duplex of ASH062 SCRATCH generated
100000 is an old duplex of ASH062 SCRATCH generated
100003 is an old duplex of ASH062 SCRATCH generated
```

If you did not add EXPDT=99001 in each duplex step, it is possible that you have many duplexes for the same tape. This check detects this and generates SCRATCH commands. These scratch commands are added with the commands generated by test 2 in file prefix.\$MNT.TAPEUPD.

3.13.9.8 Tape Check Output: Test 6

```
TEST 6: Check the LOUSER tapes against Tape Management
-----
LOUSER volume 111111 is not an ASM2 tape anymore: Userid..ASM2.BKUP.LOUSE
We are running in Simulation Mode
In real mode we would have updated the volser 111111 to the word SCRATCH

End of the ASM2 - Tape Management tests, see generated output
-----
```

The LOxxx check saves all tape volsers found in different LOXXX files.

These tape volsers are checked to ensure they are still known to CA-ASM2. If not, the LOxxx file is updated with the word SCRATCH.

This update avoids the problem of CA-ASM2 calculating that it still owns a specific volser (because it is in the LOxxx file) and the next run that uses this LOxxx file, without using the parameter \$NEWTAPE, would issue a mount for this tape that is probably used by another application.

3.13.10 Option EB - RSVP Sample Panels

Selecting this option provides you with sample panels and a CLIST to give you an idea of how you could customize this for your users.

You can use the members beginning with L1BB as samples.

3.13.11 Option EF - Forward-Merge Selection

Using the output from option EA (ASM2 Maintenance) written on a GDG, this option reads this listing and extracts all active tapes.

```
L1AAP114 ----- CA-ASM2 EXTENDED -----
COMMAND ==>

ASM2MNT Tape Statistics from: 03/04/1996

Total number tapes ==> 1209

TAPE      ==> 0
3480      ==> 59
3480X     ==> 1150
3490E     ==> 0
M860      ==> 0

No BKUP   ==> 1187    Possible Forward Merge ==> 139
ARCH      ==> 22      ==> 0
PERM      ==> 0       ==> 0
A-B       ==> 0
DFRG      ==> 0

Press Enter to continue
```

This first of two panels gives an overview of the tapes from the \$MAINT listing.

In the above example, 1187 backup tapes were found, and of these, 139 backup tapes are eligible for forward merge. 22 archive tapes were also found, with no eligible archive tapes.

Standard CA-ASM2 maintenance allows candidate volsers to be merged, but only for archive tapes. If you do many backups with long expiration dates, it may be economical to do a forward merge of them.

Pressing Enter displays panel 2 of 2 which shows details of all tapes.

```

L1AAP112 ----- CA-ASM2 EXTENDED ----- Row 1 of 1209
COMMAND ==>                               Scroll ==> DATA

```

CMD	Volser	Ratio	Active	Total	Days	Type	Media
	010965	72.666	3	218	27	BKUP	CART
	010969	62	2	124	27	BKUP	CART
	011812	53	1	53	28	BKUP	CART
	011125	50	2	100	29	BKUP	CART
	012924	46.6	5	233	19	BKUP	CART
	023051	46.5	4	186	7	BKUP	CART
	023020	45	2	90	26	BKUP	CART
	011810	44.5	2	89	28	BKUP	CART
	021803	43.75	8	350	26	BKUP	CART
	010772	43.166	6	259	12	BKUP	CART
	012189	43	1	43	23	BKUP	CART
	010817	40	1	40	71	BKUP	CART
	020187	39.5	2	79	19	BKUP	CART
	022845	38.2	10	382	27	BKUP	CART
	012382	38	1	38	28	BKUP	CART
	010491	37.5	8	300	28	BKUP	CART
	021644	37.444	9	337	22	BKUP	CART
	022699	36.875	8	296	37	BKUP	CART
	011765	35.5	4	142	13	BKUP	CART

This example shows each tape found in the \$MAINT listing, sorted by Ratio. Ratio is the total number of data sets divided by active data sets. Tapes with a high ratio could be good candidates for forward merge.

You can use the S line command to select any tapes that you want to forward merge. The only limitation is that you cannot mix archive and backup tapes in a single run.

After selecting the tapes, standard forward merge JCL is generated

3.13.12 Option EM - Member Backup

Member backup allows you to specify important PDS files to be backed up.

A member backup scans a PDS for members changed today and create a backup copy with a special name, so that the user interface is aware this is a special type of restore.

The unique name is: pdsname.\$BK.membername.

There are limitations on files that can be a candidate for member backup:

- The file name cannot be longer than 31 characters
- It must be a PDS
- No members may have an exclusive enqueue (this excludes your ISPPROF data sets)

```

L1AAP117 ----- CA-ASM2 EXTENDED MEMBER BACKUP PARAMETERS-----
COMMAND ===>

Member Backup Selection:                                User = Userid
                                                         Time = 07:58
Like    ===> Userid.DEVL.L1-                             Date = 96/08/15
                                                         Date = 96228
                                                         (or-and)
Level   ===> Userid                                     ===>
                                                         (or-and)
Volume  ===>

(Level gives the best performance, and can be used with LIKE and VOL)

Member selection: (only PDS with the SU60 bit on are selected)

Bkup ALL ===> N      (Y,N) (bkup all members or only those updated today)
BK nostat ===> Y     (Y,N) (bkup members with NO ISPF statistics)
Statist  ===> N      (Y,N) (update ISPF stats when no stats available)
From Date ===>      (DD-MM-YY) (specify only when needed)
RETPD    ===> 10     (number of days to keep this backup)

Press Enter to continue

```

The fields on this panel are used to generate JCL. All other fields on the previous panel are needed by this REXX.

Field Descriptions

Like	Used with the Level field to select your PDS files.
Level	Used with the Like field to select your PDS files.
Volume	Optionally can be used to limit the selection of PDS files.
Bkup ALL	Yes specifies to back up all members. No specifies to back up only members updated today. If this job is run on a Saturday or Sunday, all members updated since and including Friday are backed up.

BK nostat	Yes specifies to back up members without ISPF statistics.
Statist	If you backup members without statistics you can specify a dummy statistic (97/01/01 as date, 23:59 as time and ASM2 as userid).
From Date	Specifies that only members updated since this date are to be backed up.
RETPD	Specifies the retention period in days for the generated \$BK statements.

Pressing Enter performs member selection in accordance with the supplied information. Each selected member is copied to a sequential output file with the name pdsname.\$BK.membername. All generated \$BK commands are placed in a queue and ASM2DEXB is executed (explicit backup to DSA). You can change this to ASM2EXPB if needed. All temporary sequential copies from disk are then deleted.

Note: This option is provided to work on some PDS files to have an easy recovery for important members (PROCLIB or a source library). This feature was not intended to back up many PDS files.

3.13.13 Option ES - IPC Statistics

This option provides you with summary information about the VSAM statistics of your IPC and JNL.

```

L1AAP094 ----- CA-ASM2 EXTENDED -----
COMMAND ==>

DATA SET NAME: Userid.ASM2.ASM2IPC

GENERAL DATA:                                CURRENT ALLOCATION:
Volume serials:      UK0001                    Allocated trks:  1960
Type:                (INDEXED)                 Allocated extents: 1
Ave record length:   512
Max record length:   4089
Key length:          80
Relative key position: 8
CI size:             4096
CI freespace:        10
CA freespace:        10
1st extent CYLINDERS: 80
Secondary CYLINDERS: 10

Creation date:       1996.223
Expiration date:     0000.000

NOREUSE             NONSPANNED
SHROPTNS(3,3)      SPEED          UNIQUE
NOWRITECHK         NOIMBED        NOREPLICAT

CURRENT UTILIZATION:
Used trks:          1890
Used percent:       97

USAGE DATA:
Total records:      9891
Records deleted:    0
Records inserted:   0
Records updated:    5
Records retrieved:  2922
CI splits:          0
CA splits:          0
NOERASE             INDEXED
UNORDERED           TEMP-EXP

```

After viewing these statistics, you may decide to reorganize your IPC or to increase the Journal allocation (using option E6).

3.14 Customization Values (Option F)

Selecting option F from the ASM2 Restore Selection menu displays a panel similar to the following.

```

LIAAP065 ----- CA-ASM2 EXTENDED CUSTOMIZATION VALUES-----
COMMAND ==>

ISRMLIB ==> ASM.ASM2L2.R420.CAIISPM
DATE    ==> 96228      15/08/96
PREFIX  ==> Userid.ASM2
VPREFIX ==> Userid.ASM2
AUTH LVL ==> SYST      (TOP SECRET)
CATID   ==> ASM2
RETNOPT ==> 1          (0: unload date, 1: todays date)
DATE FMT ==> 1          (0: american, 1: european)
OPTION  ==> L
COMMENT ==> Y
SELDISK ==> 4          HOMEVOL ==> 1          TYPEREQ ==> 2
VOLGRP  ==> 6UK0001 6UK0002 6UK0003 6UK0004 6UK0005 6UK0006 6UK0007
        ==> 6UK0008 4WORK
RLDGRP  ==> (3390      3390      )
        ==> (          ) (          )

Interpretation of reload options:
  TRY RESTORE TO HOME VOLUME FIRST AND THEN
  TARGET VOLUME WILL BE DECIDED BY $RLDGRP

Press Enter to continue with second panel

```

This first of two panels shows values extracted from the active \$OPTIONx module and from the customization option module L1AAXMOD. If any of these values are incorrect, they can be corrected by assembling either \$OPTIONx or L1AAXMOD with the correct values and then brought in by option D.

These panels give you an interpretation of your settings and how CA-ASM2 decides which volumes to restore.

Pressing Enter displays the second panel.

```

L1AAP120 ----- CA-ASM2 EXTENDED CUSTOMIZATION VALUES-----
COMMAND  ===>

TP3420   ===> TAPE
TP3480   ===> 3480
TPM860   ===> M860
TP348X   ===> 3480X
TP3490   ===> 3490E

DSN sec  ===> Y
Byp.Prof ===> N

Mask 1   ===> L1AAMAS1          Var.  ===> SYS1
      2   ===> L1AAMAS2          ===> CAI
      3   ===>                  ===>
      4   ===>                  ===>
      5   ===>                  ===>

Press Enter or PF3 to return to the Menu

```

The first 5 fields display your current \$OPTIONS values for your different tape units.

DSN Security is an option from L1AAXMOD. If this option is set an additional security check is activated each time you select a file to restore or update.

Bypass Profile is also a L1AAXMOD parameter. If this field is set to Y all users except SYST and OPER are denied access to the first 2 Profile Update panels. A customized REXX sets these values which are specified by your CA-ASM2 administrator.

The mask fields are only displayed if you entered in L1AAXMOD the word(s) L1AAMAS1 (up to 5) and customized CLIST L1AAMAS1.

3.15 Volume Space Map (Option G)

Selecting option G from the ASM2 Restore Selection Menu displays the following pop-up panel for further selection. From this pop-up panel an online volume list or online volumes space map can be selected.

```

L1AAP000 ----- CA-ASM2 EXTENDED MAIN MENU-----
COMMAND ==>

ASM2 restore selection menu
Select one of the options ==> G

0 - Profile Update
1 - Dataset or mask restore
2 - Multiple Datasets or Application
3 - All datasets from a specific tap
4 - All files from a disk before-aft
5 - All previous options together

A - Application and Special VSAM Def
B - Full Volume Restore and Incremental Recovery
C - Cross Reference Menu
D - Reload-Recheck user options and security
E - IPC backup, recovery and reporting
F - Show some customization values
G - Volume Space map

Press Enter to continue, PF1 for help, PF3 end

```

```

L1AAP066 -CA-ASM2 Volume Space List -
Type ==> S      (V volume list)
                (S space list)
----- optional fields -----
Volume ==> UK   (Full volume)
                (Partial name)
Attr ==>       P (Private)
                S (Storage)
                U (pUblc)
Devtyp ==>     (3390..)

```

You can use the S line command to select the volume by placing a '?' in the VOLUME or NEWVOL field as these panels are called during a restore operation. When called with the G option, the S line command has no function.

3.15.1 Online Volume List

Selecting V in the TYPE field of the pop-up panel displays the following panel.

```

L1AAP007 -----CA-ASM2 EXTENDED VOLUME LIST ----- ROW 1 OF 13
COMMAND ==>                                     Scroll ==> DATA

S to select a volser, M to obtain space info, PF3 to return to previous panel
CMD VOLSER CUU STATUS TOTTRK TRKFREE CONTIG IXVTOC SMS TYPE
-----
M CAI807 2AE PRIVATE 39840 02662 02662 Y N 3390
  CAI806 321 PRIVATE
  CAI804 362 PRIVATE
  CAI80C 364 PRIVATE
  CAI809 3B0 PRIVATE
  CAI80B 3BC PRIVATE
  CAI808 3BF PRIVATE
  CAI800 496 PRIVATE
  CAI80A 4A2 PRIVATE
  CAI805 4AC PRIVATE
  CAI801 AA5 PRIVATE
  CAI802 AA6 PRIVATE
  CAI803 AA7 PRIVATE
***** BOTTOM OF DATA *****

```

This panel displays all available online volumes. Selecting one of these volsers sets the VOLUME parameter. Entering PF3 causes the VOLUME parameter to remain as it was set on the previous panel and return you to that panel. You can obtain space information by entering the M command before any of the volumes.

Field Descriptions

TOTTRK	Indicates the total number of tracks on this volume.
TRKFREE	Indicates the total number of free tracks on this volume.
CONTIG	Indicates the largest block of free tracks available on this volume.
IXVTOC	Indicates whether the VTOC is indexed.
SMS	Indicates if the volume is SMS managed (Y), initial status (I), or non-SMS managed (N).
TYPE	Device type.

3.15.2 Online Volumes Space Map

Selecting S in the TYPE field of the pop-up screen displays the following panel.

L1AAP035 ----- CA-ASM2 EXTENDED SPACE LIST -----								ROW 1 OF 13
COMMAND ==>								Scroll ==> DATA
S to select a volser, PF3 to return								
SORT# ==>				ORDER ==>			(D,A)	
CMD	VOLSER(1)	CUU(2)	STATUS(3)	TOTTRK(4)	TRKFR(5)	CONT(6)	IV(7)	SMS(8) TYPE(9)
-----	-----	-----	-----	-----	-----	-----	-----	-----
CAI807	2AE	PRIVATE	39840	00672	00283	Y	N	3390
CAI806	321	PRIVATE	26565	00367	00075	Y	N	3390
CAI804	362	PRIVATE	39840	01155	00138	Y	N	3390
CAI80C	364	PRIVATE	39840	00904	00175	Y	N	3390
CAI809	3B0	PRIVATE	39840	01576	01340	Y	N	3390
CAI80B	3BC	PRIVATE	39840	01312	00212	Y	N	3390
CAI808	3BF	PRIVATE	39840	01757	01200	Y	N	3390
CAI800	496	PRIVATE	26565	00999	00176	Y	N	3390
CAI80A	4A2	PRIVATE	26565	00600	00122	Y	N	3390
CAI805	4AC	PRIVATE	26565	00707	00150	Y	N	3390
CAI801	AA5	PRIVATE	26565	00096	00018	N	N	3390
CAI802	AA6	PRIVATE	26565	00421	00045	N	N	3390
CAI803	AA7	PRIVATE	26565	00347	00075	N	N	3390
***** BOTTOM OF DATA *****								

This panel displays all of your online volumes including information regarding space and status.

To select a volume, place an S before the volume of your choice, or press PF3 to go back to the previous panel.

You can sort this display in any order that you want by using the SORT# and ORDER fields. In the SORT# field you can enter one of the numbers next to each field description, (entering 4 would sort according to total tracks).

Field Descriptions

TOTTRK	Indicates the total number of tracks on this volume.
TRKFR	Indicates the total number of free tracks on this volume.
CONT	Indicates the largest block of free tracks available on this volume.
IV	Indicates whether the VTOC is indexed.
SMS	Indicates if the volume is SMS managed (Y), initial status (I), or non-SMS managed (N).
TYPE	Device type.

Chapter 4. Catalog Maintenance

The ISPF catalog maintenance facility allows an authorized user, usually the CA-ASM2 Database Administrator, to perform maintenance functions in the IPC. An authorized user can easily view and update any modifiable field in the IPC by simply keying over the displayed value of the field on the related catalog maintenance panel. Any change made to a record does not physically occur until all changes have been made and confirmed, and the panels are exited.

Selecting option 8 from the CA-ASM2 Primary Selection menu displays the following panel.

```
----- CA-ASM2 CATALOG UPDATE UTILITY -----
OPTION ==> 1

  1 - Unload record display or update
  2 - Defrag Volume Record display or update

FOR UNLOAD RECORDS:
  Data set name ==> SYS3.PRODUCT.DATA

FOR $DEFRAG VOLUME RECORDS:
  Disk volser   ==>

TO SPECIFY AN ALTERNATE IPC:
  IPC catalog identifier ==>                                (Optional)
```

The Catalog Update Utility panel has two options:

- 1 - Display or update Unload records.
- 2 - Display or update Defrag Volume Backup records.

Select the desired option by entering its number in the OPTION ==> field. In addition, for Unload records, enter the data set name of the record in the Data set name field or for full-volume backup records, enter the disk volser in the Disk volser field.

An IPC catalog identifier may also be specified if an IPC other than the default is desired. The default is **\$OPT** which means the \$CATID field of \$OPTIONS is used as the IPC catalog ID.

4.1 Viewing a VSAM Cluster with Alternate Indexes

This section provides information on the following Base Cluster panels:

- Selecting the base cluster
- Selecting the desired unload version
- Cell list
- ASO cell
- UDC cell (data sets created with version 4.1 and later)
- UPC cell
- UVC subcell list
- UVC volume subcell

4.1.1 Selecting the Base Cluster

```
----- CA-ASM2 CATALOG UPDATE UTILITY -----
OPTION ==> 1

      1 - Unload record display or update
      2 - Defrag Volume Record display or update

FOR UNLOAD RECORDS:
  Data set name ==> 'vn9000.qc.tstbas4'

FOR $DEFRAG VOLUME RECORDS:
  Disk volser   ==>

TO SPECIFY AN ALTERNATE IPC:
  IPC catalog identifier ==> asm2                      (Optional)
```

This example looks at a VSAM cluster that is known to have an alternate index. The name **VN9000.QC.TSTBAS4** is keyed into the data set name field. Notice the quotes around the name. In keeping with ISPF conventions, the quotes designate a fully qualified data set name. If the quotes are omitted, your TSO profile's prefix is used as the high level qualifier. In this case, an IPC catalog identifier of **ASM2** is keyed in.

4.1.2 Selecting the Desired Unload Version

```

----- CA-ASM2 CATALOG UNLOAD VERSION TABLE ----- ROW 1 OF 19
COMMAND INPUT ==> SCROLL ==> CSR

S - Select Unload Version
D - Delete Unload Version
LD - Logically Delete Unload Version

DSNAME = VN9000.QC.TSTBAS4

  UNLD  UNLOAD  UNLOAD  SYSTEM  CAT  PRIMARY  A/B
  TYPE  DATE    TIME    IDENT   STAT VOLUME   TYPE  STATUS
  ----  -
s  A    09/11/96  19:50:00      V    SJ0001  ARCH
  A    01/16/96  14:30:00  XE33     V    SJ0001  ARCH
  A    01/12/96  16:12:00  XE33     V    SJ0001  ARCH
  A    01/11/96  20:43:00  XE33     V    SJ0001  ARCH
  A    01/11/96  19:44:00  XE33     V    SJ0001  ARCH
  A    01/11/96  19:07:00  XE33     V    SJ0001  ARCH
  A    01/09/96  19:52:00  XE33     V    SJ0001  ARCH
  B    05/08/96  15:23:00  XE33     V    SJ0001  BKUP
  B    05/07/96  15:25:00  XE33     V    SJ0001  BKUP
  B    04/11/96  20:04:00      V    SJ0001  BKUP  LDELETE 09/21/96
  B    04/10/96  13:55:00  XE33     V    SJ0001  BKUP
  B    01/09/96  19:28:00  XE33     V    SJ0001  BKUP

```

CA-ASM2 presents all versions for this data set, either archive or backup. All archive versions are presented first, followed by all backup versions. Within either the archive or backup lists, each version is listed with the most recent first.

If a given version has been logically deleted, it is marked **LDELETE** with the date it was logically deleted. The \$OPTIONS field, \$RETDAYS, dictates the number of days a logically deleted data set is maintained on the IPC. While any version is logically deleted, it is not automatically selected by any function for processing. It is as though it were not in the IPC at all, except that it can be "undeleted", or reinstated, with the CA-ASM2 \$CU, \$UA, or \$UB commands. In this case, the most recent archive version of the cluster is selected. Notice it was unloaded on 9/11/96 at 19:50:00.

The SYSTEM IDENT field identifies the MVS system ID of the system the data set unload job ran on. (CA-ASM2 only displays the system ID if you elected to record SYSID at unload time.) The CAT STAT field identifies the operating system catalog status for the data set at unload time. It may be cataloged non-VSAM (C), cataloged VSAM (V), or not cataloged non-VSAM (N).

You can specify one of three options in the action field to the left of the unload type: S indicates select for update; D, delete this archive or backup version of the data set from the IPC immediately; or LD, mark this version as logically deleted, but retain the record in the IPC. When you request an Unload record be deleted, a confirmation panel is displayed and prompts you to confirm the delete. Any response other than Y (YES) is regarded as a NO.

4.1.3 Base Cluster's Cell List

```

----- CA-ASM2 CATALOG UNLOAD CELLS TABLE ----- ROW 1 OF 4
COMMAND INPUT ==>                                SCROLL ==> CSR

DSN=VN9000.QC.TSTBAS4

S - Select Cell      D - Delete Cell

  CELL  CELL
  TYPE  DESCRIPTION
  ----  -
s ASO   VSAM Association Table
  UDC   Unload Destination Information
  UPC   Unload Process Information
  UVC   Unload Volume Table
***** BOTTOM OF DATA *****

```

All updatable cells are presented in this list. Every IPC record has a header cell with a cell ID of **HDR** that cannot be changed through this interface. There is only one occurrence of a given cell within an IPC record. When you need to record multiple entities, such as with the multiple volumes of a multivolume data set, the appropriate cell contains multiple subcells with the information.

To select or delete the cell, place either an S (Select) or D (Delete) in the field to the left of the cell type. If D is entered for a required cell that cannot be deleted, a short error message is displayed. By pressing PF1, you can display a longer version of the message with a message ID that can be referenced for further explanation.

The next set of panels shows the effect of selecting each one of the cells in the order shown.

4.1.4 Base Cluster's ASO Cell

```

----- CA-ASM2 CATALOG ASSOCIATION TABLE ----- ROW 1 OF 3
COMMAND INPUT ==>                                SCROLL ==> CSR

blank - Enter updates in displayed row
D      - Delete Association

DSN=VN9000.QC.TSTBAS4
VSAM COMPONENT ==> SPHERE

      TYPE      ATTRIBUTES      RACF  ASSOCIATED
      -----      -----      ----  -----
DATA          00              00    VN9000.QC.TSTBAS4.D
INDEX         00              00    VN9000.QC.TSTBAS4.I
ALT-INDEX     80              40    VN9000.QC.TSTAIX4.AIX
***** BOTTOM OF DATA *****

```

This base cluster is a key-sequenced data set with one alternate index. The data component name is always listed first. If the base cluster is a KSDS, the index component is listed next. If the base cluster has alternate indexes, they are listed next. If the base cluster has alias names (that is, a path name pointing to itself), those path names are listed last.

4.1.5 Base Cluster's UDC Cell (Data Sets Created Prior to Version 4.1)

```

----- CA-ASM2 CATALOG UNLOAD DESTINATION CELL -----
OPTION ==>

Enter any updates for unload destination copy 1:

Tape dsname           ==> V.VN9000.QC.TSTBAS4
Data compacted flag   ==> 00          (in hexadecimal)
Output volume         ==> 1 of 1
Volume 1 VOLSER       ==> ASH059
Volume 1 file seq #   ==> 8
Volume 1 block number ==> 0
Volume 1 bytes        ==> 0
Volume 1 media type   ==> 0
Volume 1 flag byte    ==> 00

```

Note: The panel shown above is displayed for data sets created prior to Version 4.1. For data sets created with Version 4.1 or later, the panel shown on the following page is displayed.

Every entity recorded in the IPC that occupies space on tape has an Unload Destination Cell. Currently, the only unload records that do not have UDC cells are VSAM path records. The path ties together the cluster and an alternate index, but does not occupy any space; therefore it has no UDC.

Notice the Output Volume Field. It indicates **1 of 1** for this data set. If it said 1 of 2, for example, you could key over the 1 with a 2 and press ENTER. This would show you the second tape volume's information.

Also notice the tape data set name. For VSAM data sets, the tape data set name needs to be different than the VSAM data set's name, so CA-ASM2 prefixes the VSAM data set name with 'V.' for the tape.

The field "Volume n bytes" shows the number of bytes written to the tape data set as a 32 bit hex field. If the high order bit is 0, the field shows the actual number of bytes. If the high order bit is 1, the field shows the number of kilobytes (1 kilobytes = 1024 bytes).

4.1.6 Base Cluster's UDC Cell (Data Sets Created with Version 4.1 or Later)

```
----- CA-ASM2 CATALOG UNLOAD DESTINATION CELL -----
OPTION ==>

Enter any updates for unload destination copy 1:

Tape dsname          ==> V.VN9000.QC.TSTBAS4
Data compacted flag  ==> 81 (in hexadecimal)
Compress Technique    ==> E2 (IN HEXADECEIMAL)
Compress Subtype      ==> 00 (IN HEXADECEIMAL)
Byte count            ==> 005141 (BEFORE COMPRESSION)
Byte count            ==> 001018 (AFTER COMPRESSION)
Dataset Blocksize     ==> 32760
Output volume         ==> 1 of 1
Volume 1 VOLSER       ==> ASF058
Volume 1 file seq #   ==> 18
Volume 1 block number ==> 00000000
Volume 1 bytes        ==> 0K
Volume 1 media type   ==> 0
Volume 1 flag byte    ==> 00
```

Note: The panel shown above is displayed for data sets created with Version 4.1 or later. For data sets created prior to Version 4.1, the panel shown on the preceding page is displayed.

4.1.7 Base Cluster's UPC Cell (1 of 2)

```

----- CA-ASM2 CATALOG UPC CELL UPDATE (1 of 2) -----
OPTION ==> 2

2 - Select second panel of UPC cell data

Enter any unload process updates:
CA-ASM2 unload version ==> R4.2.0      (Rn.n.n)
Data set name          ==> VN9000.QC.TSTBAS4
Catalog status         ==> V          (-Unknown; C-Cataloged; N-Not cat; V-VSAM)
Unload system SYSID    ==> XE33
Unload reason flag 1   ==> 40         (in hexadecimal)
Unload reason flag 2   ==> 00         (in hexadecimal)
Unload action flag     ==> 00         (in hexadecimal)
Unload disk manager    ==> 1
Unload data format     ==> 5
Data set type          ==> 08         (in hexadecimal)
Data set modifiers     ==> 04         (in hexadecimal)
Allocation indicators  ==> 00         (in hexadecimal)
Data set indicators    ==> 00         (in hexadecimal)
Hardware flags         ==> 00         (in hexadecimal)
Software flags         ==> 40         (in hexadecimal)

```

Every entity recorded in the IPC that occupies space on tape has an Unload Process Cell. Currently, the only unload records that do not have UPC cells are VSAM path records. For the most part, you do not need to be concerned with the contents of the UPC. It reflects the conditions that occurred during the unload process itself. To see the second panel of the two panel set (shown on the next page), enter **2** in the command field.

4.1.8 Base Cluster's UPC Cell (2 of 2)

```
----- CA-ASM2 CATALOG UPC CELL UPDATE (2 of 2) -----
OPTION ==>

  1 - Select first panel of UPC cell data

Enter any unload process updates:
Action results          ==> 00      (in hexadecimal)
Unload uncatalog RC    ==> 0
Unload scratch RC      ==> 0
Unload recatalog RC    ==> 0
Unload return code     ==> 0
Recatalog VOLSER       ==>
Last used date         ==> 09/10/96
Use count              ==> 0
Expiration days left   ==> 0
KILOBYTE count         ==> 3500
Unload requestor ID    ==>
Retention period       ==> 730
Unload date            ==> 09/11/1996
Unload time            ==> 19:50:00.0
Unload type            ==> A      (A-Archive; B-Backup; D-Defrag; P-Permanent)
Available flag byte    ==> 00      (in hexadecimal)
```

On the second UPC panel, there are a few fields of special interest. For example, if the data set was recataloged, the new volume serial number is identified here.

4.1.9 Base Cluster's UVC Subcell List

```
----- CA-ASM2 CATALOG UNLOAD VOLUME TABLE ----- ROW 1 OF 1
COMMAND INPUT ==>                                SCROLL ==> CSR

DSN=VN9000.QC.TSTBAS4

S - Select Volume

      INPUT      DSCBs/
      VOLUME     VOLUME
      -----
      SJ0001      1
***** BOTTOM OF DATA *****
```

Every entity recorded in the IPC that occupied space on disk has an Unload Volume Cell. Currently, the only unload records that do not have UVC cells are VSAM path records. VSAM paths exist as OS catalog entities and do not occupy space on a disk volume; therefore they do not have a UVC. The UVC holds all of the DSCBs from all of the disk volumes where the data set originally resided. The UVC is divided into subcells with each subcell defining a single disk volume. From this panel, select the disk volume entry you are interested in.

The PDS directory blocks field displays PDM when the unload of a partitioned data set was done by the physical data mover, because PDM does not capture a count of the number of directory blocks. PDM reload always restores the PO data set with the same number of directory blocks as it had when unloaded. The IPC update panel cannot be used to change this data item.

4.2 Viewing a VSAM Alternate Index

This section provides information on the following Alternate Index panels:

- Selecting the alternate index
- Selecting the desired unload version
- Cell list
- ASO cell
- UDC cell (data sets created with version 4.1 and later)
- UPC cell
- UVC subcell list
- UVC volume subcell

4.2.1 Selecting the Alternate Index

```
----- CA-ASM2 CATALOG UPDATE UTILITY -----
OPTION ==> 1

    1 - Unload record display or update
    2 - Defrag Volume Record display or update

FOR UNLOAD RECORDS:
  Data set name ==> 'vn9000.qc.tstaix4.aix'

FOR $DEFRAG VOLUME RECORDS:
  Disk volser   ==>

TO SPECIFY AN ALTERNATE IPC:
  IPC catalog identifier ==> asm2                      (Optional)
```

Extending from the previous example, you knew the alternate index name from the ASO cell of the base cluster. **VN9000.QC.TSTAIX4.AIX** is keyed into the data set name field. Notice the quotes around the name. In keeping with ISPF conventions, the quotes designate a fully qualified data set name. If the quotes are omitted, your TSO profile's prefix is used as the high level qualifier.

4.2.2 Selecting the Desired Unload Version

```

----- CA-ASM2 CATALOG UNLOAD VERSION TABLE ----- ROW 1 OF 16
COMMAND INPUT ==> SCROLL ==> CSR

S - Select Unload Version
D - Delete Unload Version
LD - Logically Delete Unload Version

DSNAME = VN9000.QC.TSTAIX4.AIX

  UNLD  UNLOAD  UNLOAD  SYSTEM  CAT  PRIMARY  A/B
  TYPE  DATE    TIME    IDENT  STAT VOLUME   TYPE  STATUS
  ----  -
s  A    09/11/96  19:50:00      V    SJ0005  ARCH
  A    01/16/96  14:30:00  XE33    V    SJ0005  ARCH
  A    01/12/96  16:12:00  XE33    V    SJ0005  ARCH
  A    01/11/96  20:43:00  XE33    V    SJ0005  ARCH
  A    01/11/96  19:44:00  XE33    V    SJ0005  ARCH
  A    01/11/96  19:07:00  XE33    V    SJ0005  ARCH
  A    01/09/96  19:52:00  XE33    V    SJ0005  ARCH
  B    05/08/96  15:23:00  XE33    V    SJ0005  BKUP
  B    05/07/96  15:25:00  XE33    V    SJ0005  BKUP
  B    04/11/96  20:04:00      V    SJ0005  BKUP  LDELETE 09/21/96
  B    04/10/96  13:55:00  XE33    V    SJ0005  BKUP
  B    01/09/96  18:37:00  XE33    V    SJ0005  BKUP

```

For alternate indexes, as with base clusters, CA-ASM2 presents all versions for this data set, either archive or backup. All archive versions are presented first, followed by all backup versions. Within either the archive or backup lists, each version is listed with the most recent first. If the associated base cluster was marked as logically deleted, all associated IPC records for that same version are also marked logically deleted.

When the base cluster was selected in the previous example, you took note of the fact it was unloaded on 9/11/96 at 19:50:00. Notice here that alternate indexes are unloaded at the same time as the base cluster and have the **exact** same unload date and time as the base cluster.

4.2.3 Alternate Index's Cell List

```

----- CA-ASM2 CATALOG UNLOAD CELLS TABLE ----- ROW 1 OF 4
COMMAND INPUT ==>                                SCROLL ==> CSR

DSN=VN9000.QC.TSTAIX4.AIX

S - Select Cell      D - Delete Cell

CELL  CELL
TYPE  DESCRIPTION
-----
ASO    VSAM Association Table
UDC    Unload Destination Information
UPC    Unload Process Information
UVC    Unload Volume Table
***** BOTTOM OF DATA *****

```

All updatable cells are presented in this list. Every IPC record has a header cell with a cell ID of **HDR** that cannot be changed through this interface. There is only one occurrence of a given cell within an IPC record. Where there is a need to record multiple entities, such as with the multiple volumes of a multivolume data set, the appropriate cell contains multiple subcells with the information.

The next set of panels shows the effect of selecting each one of the cells in the order they are shown.

4.2.4 Alternate Index's ASO Cell

```

----- CA-ASM2 CATALOG ASSOCIATION TABLE ----- ROW 1 OF 3
COMMAND INPUT ==>                                SCROLL ==> CSR

blank - Enter updates in displayed row
D      - Delete Association

DSN=VN9000.QC.TSTAIX4.AIX
VSAM COMPONENT ==> ALT-INDEX

      TYPE      ATTRIBUTES      RACF  ASSOCIATED
      -----      -
DATA          00              00  VN9000.QC.TSTAIX4.AIX.D
INDEX         00              00  VN9000.QC.TSTAIX4.AIX.I
CLUSTER       80              48  VN9000.QC.TSTBAS4
PATH          80              08  VN9000.QC.TSTPTH4
***** BOTTOM OF DATA *****

```

Because the alternate index is a KSDS, it has a data and index component. The data component is always listed first, followed by the index component. The base cluster that "owns" this alternate is listed third. All path names that tie this alternate index back to the owning cluster are listed next. Generally, there is only one path name, but many shops define two path names: one that is read only, and one that is for updating.

If this IPC record was for a path, this cell would be the only cell in the record, and it would only contain the name of the associated alternate index.

4.2.5 Alternate Index's UDC Cell (Data Sets Created Prior to Version 4.1)

```

----- CA-ASM2 CATALOG UNLOAD DESTINATION CELL -----
OPTION ==>

Enter any updates for unload destination copy 1:

Tape dsname           ==> V.VN9000.QC.TSTAIX4.AIX
Data compacted flag   ==> 00          (in hexadecimal)
Output volume         ==> 1 of 1
Volume 1 VOLSER       ==> ASH059
Volume 1 file seq #   ==> 9
Volume 1 block number ==> 0
Volume 1 bytes        ==> 0
Volume 1 media type   ==> 0
Volume 1 flag byte    ==> 00

```

Note: The panel shown above is displayed for data sets created prior to Version 4.1. For data sets created with Version 4.1 or later the panel shown on the following page is displayed.

Just like a cluster, the alternate index has an Unload Destination Cell. Alternates are unloaded immediately after the cluster that they are associated with, so they tend to be on the same output tape as the base cluster.

Notice the Output Volume Field. It indicates **1 of 1** for this data set. If it said 1 of 2, for example, you could key over the 1 with a 2 and press Enter. This would show you the second tape volume's information.

Also notice the tape data set name. For VSAM data sets, the tape data set name needs to be different than the VSAM data set's name, so CA-ASM2 prefixes the VSAM data set name with 'V.' for the tape.

4.2.6 Alternate Index's UDC Cell (Data Sets Created With Version 4.1 or Later)

```
----- CA-ASM2 CATALOG UNLOAD DESTINATION CELL -----
OPTION ==>

Enter any updates for unload destination copy 1:

Tape dsname          ==> V.VN9000.QC.TSTAIX4.AIX
Data compacted flag  ==> 81 (in hexadecimal)
Compress Technique    ==> E2 (IN HEXADECIMAL)
Compress Subtype      ==> 00 (IN HEXADECIMAL)
Byte count            ==> 005233 (BEFORE COMPRESSION)
Byte count            ==> 001077 (AFTER COMPRESSION)
Dataset Blocksize     ==> 32760
Output volume         ==> 1 of 1
Volume 1 VOLSER       ==> ASH059
Volume 1 file seq #   ==> 9
Volume 1 block number ==> 00000000
Volume 1 bytes        ==> 0K
Volume 1 media type   ==> 0
Volume 1 flag byte    ==> 00
```

Note: The panel shown above is displayed for data sets created with Version 4.1 or later. For data sets created prior to Version 4.1, the panel shown on the preceding page is displayed.

4.2.7 Alternate Index's UPC Cell (1 of 2)

```

----- CA-ASM2 CATALOG UPC CELL UPDATE (1 of 2) -----
OPTION ==>

    2 - Select second panel of UPC cell data

Enter any unload process updates:
CA-ASM2 unload version ==> R4.0.0      (Rn.n.n)
Data set name          ==> VN9000.QC.TSTAIX4.AIX
Catalog status         ==> V          (-Unknown; C-Cataloged; N-Not cat; V-VSAM)
Unload system SYSID    ==> XE33
Unload reason flag 1   ==> 40         (in hexadecimal)
Unload reason flag 2   ==> 00         (in hexadecimal)
Unload action flag     ==> 00         (in hexadecimal)
Unload disk manager    ==> 1
Unload data format     ==> 5
Data set type          ==> 08         (in hexadecimal)
Data set modifiers     ==> 88         (in hexadecimal)
Allocation indicators  ==> 00         (in hexadecimal)
Data set indicators    ==> 00         (in hexadecimal)
Hardware flags         ==> 00         (in hexadecimal)
Software flags         ==> 40         (in hexadecimal)

```

Just like the base cluster, the alternate index has an Unload Process Cell. To see the second panel of the two panel display (shown on the next page), you simply key in **2**.

4.2.8 Alternate Index's UPC Cell (2 of 2)

```
----- CA-ASM2 CATALOG UPC CELL UPDATE (2 of 2) -----
OPTION ==>

  1 - Select first panel of UPC cell data

Enter any unload process updates:
Action results          ==> 00      (in hexadecimal)
Unload uncatalog RC    ==> 0
Unload scratch RC      ==> 0
Unload recatalog RC    ==> 0
Unload return code     ==> 0
Recatalog VOLSER       ==>
Last used date         ==> 09/10/96
Use count              ==> 0
Expiration days left   ==> 0
KILOBYTE count         ==> 3500
Unload requestor ID    ==>
Retention period       ==> 730
Unload date            ==> 09/11/1996
Unload time            ==> 19:50:00.0
Unload type            ==> A      (A-Archive; B-Backup; D-Defrag; P-Permanent)
Available flag byte    ==> 00      (in hexadecimal)
```

If the base cluster was recataloged to a pseudo-volser, the alternate index and any related paths also show that same pseudo-volser.

4.2.9 Alternate Index's UVC Subcell List

```

----- CA-ASM2 CATALOG UNLOAD VOLUME TABLE ----- ROW 1 OF 1
COMMAND INPUT ==>                                SCROLL ==> CSR

DSN=VN9000.QC.TSTAIX4.AIX

S - Select Volume

      INPUT      DSCBs/
      VOLUME     VOLUME
      -----
s  SJ0005        1
***** BOTTOM OF DATA *****

```

Just like the base cluster, the alternate index occupied space on a disk volume and therefore have an Unload Volume Cell. The UVC holds all of the DSCBs from all of the disk volumes where the data set originally resided. The UVC is divided into subcells with each subcell defining a single disk volume. From this panel, select the disk volume entry you are interested in.

4.3 Viewing a Sequential Data Set with Tape and Disk Copies

This section provides information on the following Sequential Data Set panels:

- Selecting the alternate index to view
- Selecting the desired unload version
- Viewing the unload record cell list
- Selecting a copy of the data set
- Viewing the disk copy characteristics
- Selecting the tape copy of the data set
- Viewing the tape copy characteristics
- UPC cell
- UVC subcell list
- UVC volume subcell

4.3.1 Selecting the Sequential Data Set to View

```
----- CA-ASM2 CATALOG UPDATE UTILITY -----  
OPTION ==> 1  
  
    1 - Unload record display or update  
    2 - Defrag Volume Record display or update  
  
FOR UNLOAD RECORDS:  
  Data set name ==> 'VTOC1.VSJ0005'  
  
FOR $DEFRAG VOLUME RECORDS:  
  Disk volser   ==>  
  
TO SPECIFY AN ALTERNATE IPC:  
  IPC catalog identifier ==> ASM2                (Optional)
```

The value VTOC1.VSJ0005 identifies the sequential data set for which copy information is to be requested. The value ASM2 identifies the IPC to be searched for the unload records requested.

4.3.2 Selecting the Desired Unload Version

----- CA-ASM2 CATALOG UNLOAD VERSION TABLE -----								ROW 1 OF 81
COMMAND INPUT ==>								SCROLL ==> CSR
S - Select Unload Version								
D - Delete Unload Version								
LD - Logically Delete Unload Version								
DSNAME = VT0C1.VSJ0005								
	UNLD TYPE	UNLOAD DATE	UNLOAD TIME	SYSTEM IDENT	CAT STAT	PRIMARY VOLUME	A/B TYPE	STATUS
S	B	11/06/96	14:24:00		C	SJ0005	BKUP	
	B	10/31/96	14:39:00		C	SJ0005	BKUP	
	B	10/31/96	13:07:00		C	SJ0005	BKUP	
	B	10/31/96	12:55:00		C	SJ0005	BKUP	
	B	10/31/96	11:21:00		C	SJ0005	BKUP	
	B	10/30/96	19:36:00		C	SJ0005	BKUP	
	B	10/30/96	19:28:00		C	SJ0005	BKUP	
	B	10/30/96	18:06:00		C	SJ0005	BKUP	
	B	10/30/96	17:34:00		C	SJ0005	BKUP	
	B	10/30/96	17:07:00		C	SJ0005	BKUP	
	B	10/30/96	16:58:00		C	SJ0005	BKUP	

This panel lists all the archive and backup versions for the sequential data set identified by the DSNAME= value. The functions S, D and LD can be applied to each version by placing the function codes next to the particular version entry.

The UNLD TYPE field indicates (A)rchive or (B)ackup version of the data sets. The archive version always precedes the backup versions in the list.

The UNLOAD DATE and UNLOAD TIME fields indicate when the copies were created. The versions are listed in most current copy order.

If the MVS SYSID was elected to be retained when the data set copy was made, then the SYSTEM IDENT field contains that value.

The catalog status of the data set at time of copy is displayed in the CAT STAT field. The valid values are (C) for cataloged non-VSAM, (N) for not cataloged non-VSAM and (V) for cataloged VSAM.

The PRIMARY VOLUME identifies the first or only volume on which the data set was allocated.

If the unload type is A, A/B TYPE can be either PERM or ARCH. If unload type is B, A/B TYPE can be DFRG or BKUP.

The final field is labeled STATUS. If the version has been logically deleted, LDELETE mm/dd/yy appears in the field. The value mm/dd/yy is the date of logical delete.

4.3.3 Viewing the Unload Record Cell List

```
----- CA-ASM2 CATALOG UNLOAD CELLS TABLE ----- ROW 1 OF 3
COMMAND INPUT ==>                                SCROLL ==> CSR

DSN=VTOC1.VSJ0005

S - Select Cell      D - Delete Cell

CELL  CELL
TYPE  DESCRIPTION
-----
S UDC  Unload Destination Information
   UPC  Unload Process Information
   UVC  Unload Volume Table
***** BOTTOM OF DATA *****
```

This panel provides the list of constituent cells that comprise detailed information about the characteristics of the copied data set. To get information about any cell, enter S on the line containing the cell abbreviation. In this case, the Unload Destination Cell (UDC) is selected to get information about the copies of the data set identified by the DSN= value.

4.3.4 Selecting a Copy of the Data Set

```
----- CA-ASM2 CATALOG UNLOAD DESTINATION TABLE ----- ROW 1 OF 2
COMMAND INPUT ==>                                     SCROLL ==> CSR

DSN=VTOC1.VSJ0005

S - Select Copy

  SUBCELL  OUTPUT  FIRST  #OUTPUT
  TYPE      COPY   VOLSER  VOLUMES
  -----
S DISK      1     WRK04A    1
TAPE        2     ASF052    1
***** BOTTOM OF DATA *****
```

This panel shows a particular data set has two copies. The copy marked DISK indicates a copy resides in the Disk Staging Area (DSA) introduced by the Disk-to-Disk Archive feature of Version 4.1. The other copy resides on a tape volume. In this example the detail information is about the nature of the disk copy selected.

4.3.5 Viewing Disk Copy Characteristics

```
----- CA-ASM2 CATALOG UNLOAD DESTINATION CELL -----
OPTION ==>

Enter any updates for unload destination copy  1:

Disk Dsname          ==> MURTO01.DSAUNLD.B1991317.T150544.A0001
Data Flag            ==> 80  (IN HEXADECIMAL)
Compress Technique    ==> E2  (IN HEXADECIMAL)
Compress Subtype      ==> 00  (IN HEXADECIMAL)
Byte count           ==> 085244      (BEFORE COMPRESSION)
Byte count           ==> 052766      (AFTER  COMPRESSION)
Data set Blocksize    ==> 23476
Track Used            ==> 2
Output Volume         ==> 1  of  1
Volume 1 VOLSER       ==> WRK04A
Unit type             ==> 0E
Device Byte Count     ==> 052834
```

This display is of essential information about the disk copy of the selected data set. If the disk copy spans several volumes the Output Volume field displays 1 of n where n signifies the number of volumes containing the copy. In order to display the other copy's volume serial numbers, enter the desired value at the first digit of the display.

4.3.6 Selecting the Tape Copy of the Data Set

```
----- CA-ASM2 CATALOG UNLOAD DESTINATION TABLE ----- ROW 1 OF 2
COMMAND INPUT ==>                                     SCROLL ==> CSR

DSN=VTOC1.VSJ0005

S - Select Copy

  SUBCELL  OUTPUT  FIRST  #OUTPUT
  TYPE     COPY    VOLSER  VOLUMES
  ----
DISK       1      WRK04A    1
S TAPE     2      ASF052    1
***** BOTTOM OF DATA *****
```

This panel is displayed again when the END function is entered from viewing a tape or disk copy. The tape copy can be selected by entering S next to the row marked TAPE.

4.3.7 Viewing Tape Copy Characteristics

```
----- CA-ASM2 CATALOG UNLOAD DESTINATION CELL -----
OPTION ==>

Enter any updates for unload destination copy  2:

Tape dsname          ==> VTOC1.VSJ0005
Data compacted flag  ==> 81  (in hexadecimal)
Compress Technique   ==> E2  (IN HEXADECIMAL)
Compress Subtype     ==> 00  (IN HEXADECIMAL)
Byte count           ==> 085244      (BEFORE COMPRESSION)
Byte count           ==> 052766      (AFTER  COMPRESSION)
Data set Blocksize   ==> 32760
Output volume        ==> 1  of  1
Volume 1 VOLSER      ==> ASF052
Volume 1 file seq #  ==> 3
Volume 1 block number ==> 0
Volume 1 bytes       ==> 52K
Volume 1 media type  ==> 0
Volume 1 flag byte   ==> 00
```

The information displayed is required to successfully reload this copy of the data set. If the copy is stored on multiple volumes, the Output Volume field reflects the number of volumes used by the second number. The first number of this field may be changed to get the nth volume in the group.

4.4 Accessing \$DEFrag Volume Records

Each time \$DEFrag is run to make a full volume backup, it records a DEFrag Volume Record in the IPC. This record is in addition to individual data set records that are written to the IPC when ASM2 mode is selected. The full volume backup records are designed to facilitate full volume recovery. They are used by the new incremental recovery process to allocate the appropriate tape volumes and to determine the last full volume backup time so the appropriate incremental backups can be selected.

Panels involved in this process are as follows:

- Selecting the disk volume
- Selecting the desired \$DEFrag volume unload version
- Disk volume DVB cell

4.4.1 Selecting the Disk Volume

```
----- CA-ASM2 CATALOG UPDATE UTILITY -----
OPTION ==> 2

    1 - Unload record display or update
    2 - Defrag Volume Record display or update

FOR UNLOAD RECORDS:
  Data set name ==>

FOR $DEFrag VOLUME RECORDS:
  Disk volser   ==> sj0004

TO SPECIFY AN ALTERNATE IPC:
  IPC catalog identifier ==>                                (Optional)
```

This is very similar to selecting a data set. Instead of filling in the data set name, fill in the Disk volser field and select **2** to see the \$DEFrag Volume unload versions.

4.4.2 Selecting the Desired \$DEFRAG Volume Unload Version

```
----- CA-ASM2 CATALOG $DEFRAG VOLUME RECORD TABLE ----- ROW 1 OF 2
COMMAND INPUT ==>                                           SCROLL ==> CSR

S - Select Defrag Volume Record
D - Delete Defrag Volume Record

Disk Volume = SJ0004

  SYSTEM    UNLOAD    UNLOAD
  IDENT     DATE      TIME      STATUS
  -----
s  XE33     09/21/96   13:10:50
   XE33     06/19/96   19:55:17
***** BOTTOM OF DATA *****
```

The versions are listed with the most recent backup first. In this example, the most current version is selected.

4.4.3 Disk Volume's DVB Cell

```
----- CA-ASM2 CATALOG $DEFRAG VOLUME RECORD UPDATE -----
OPTION ==>

    Defrag Volume Backup Record for volume SJ0004

    from the $DEFRAG run on system XE33 on 09/21/96 at 13:10:50

Enter any $DEFRAG updates:
$DEFRAG date      ==> 09/21/1996
$DEFRAG time      ==> 13:10:50.3
File one DSNAME   ==> SYS2.ASM2.BKUP.DEFRAG.MSTR
Processing flags  ==> 80      (in hexadecimal)
Media type        ==> 3420    (3420, 3480, M860)
Tape volume count ==> 2      (1-15)
Dump tape volumes ==> ASF085   ASH025
                  ==>
```

A \$DEFRAG Volume Record contains a single \$DEFRAG Volume Backup cell. This DVB cell lists all of the tape volumes used to make the full volume backup of the disk. It also contains the tape data set name used for file one on the tape.

4.5 Other IPC Cells

This section provides information on the following panels that can be used to perform maintenance functions in the IPC.

- IXR cell
- RLD cell
- SMS cell
- CA-3 cell
- CA-6 cell
- Comment cell

4.5.1 IXR Cell

```

----- CA-ASM2 CATALOG IXR CELL UPDATE -----
OPTION ==>

Enter any IXR updates:
Program update id ==> X (C-$COPYCAT; M-MRG; N-convert; R-IXR restart; X-IXR)
Processing status ==> 0 (see macro #IXRS in CAI.CAIMAC)
In-process flags ==> 00 (In hex)
Reload volume ==> ASF060 Reload requestor ==> SMIJ001T
Date of update ==> 05/24/1996
Time of update ==> 22:22:51.0
Update system ==> XE33
Reload UCB type ==> 00000000 DLA cvol suffix ==>
Reload temp DSN ==>
$DSB return code ==> 12 Locate RC ==> 0
$DSB reason code ==> 204 Allocate RC ==> 0
$DSB info code ==> 49200 Reload RC ==> 0
Reloads attempted ==> 0 Recatalog RC ==> 0
Reloads completed ==> 0
Reload indicators ==> 00 (In hex)
JES3 cvols date ==> JES3 cvols time ==>
# of JES3 cvols ==>
Candidate volumes ==>
Candidate UCBTYP ==>

```

Any unload version selected by IXR for an attempted reload has an IXR cell. This RLD cell is updated with status and control information during a reload operation, and at the completion of the reload operation.

4.5.2 RLD Cell

```
----- CA-ASM2 CATALOG RLD CELL UPDATE -----  
COMMAND INPUT ==>  
  
Enter any Reload updates:  
LOCATE return code      ==> 8  
Alloc return code       ==> 0  
Reload return code      ==> 0  
Recat return code       ==> 0  
Reload flag             ==> 40      (in hexadecimal)  
Reload copy number      ==> 1  
Reload date             ==> 06/19/1996  
Reload time             ==> 14:15:49.3  
Reload requestor id     ==> DBA#JRT  
Reload new DSNAME       ==> DBA#JRT.PRODUCT.DATA  
Reload volume count     ==> 1  
Reload VOLSER           ==> M80005  
Reload UCBTYPE          ==> 3010200E
```

Any unload version successfully reloaded by a \$RA or \$RB command, or by IXR, has a RLD cell. The reload cell records the return codes from the various operations performed to reload and properly name the data set, along with the reloaded data set name and disk volume residency after reload.

4.5.3 SMS Cell

```
----- CA-ASM2 CATALOG SMS CELL UPDATE -----  
OPTION ==>  
  
Enter any DF/SMS updates:  
Data Class Name      ==>  
Storage Class Name   ==>  
Management Class Name ==>  
Storage Group Name   ==> PRIME
```

Any unload version for an SMS managed data set has an SMS cell. The SMS cell records the data class, storage class, management class, and storage group names assigned to the data set when it was unloaded.

4.5.4 CA-3 Cell

```
----- CA-ASM2 CATALOG CA-3 CELL UPDATE -----  
OPTION ==>  
  
Enter any UCC3 updates:  
  
File sequence #      ==> 0  
Disk volume seq #    ==> 0  
Calculated feet      ==> 36  
UCC3 run number      ==> 667  
Tape density         ==> D3   (in hexadecimal)  
VSAM data type       ==> 00   (in hexadecimal)
```

Any unload version for a data set archived or backed up by CA-3 has a UC3 cell. The UC3 cell is built for each unload version converted to the CA-ASM2 IPC from a CA-3 DMC and contains the few CA-3 data items needed by CA-ASM2 to perform a reload.

4.5.5 CA-6

```
----- CA-ASM2 CATALOG CA-6 CELL UPDATE -----  
OPTION ==>  
  
Enter any UCC6 updates:  
  
UCC6 password      ==>  
UCC6 flag 1        ==> C0      (in hexadecimal)  
UCC6 flag 2        ==> 14      (in hexadecimal)
```

Any unload version for a PDS data set managed by CA-6 has a UC6 cell. It contains the CA-6 flags contained in the PDS's directory when the data set was unloaded.

4.5.6 Comment Cell

```
----- CA-ASM2 CATALOG COM CELL UPDATE -----  
OPTION ==>  
  
Enter any comment updates:  
  
==>COMMENTS WILL APPEAR HERE ***
```

Any unload version that contains user specified comments has a COM cell. The comments cell contains the comments.

Chapter 5. Command Descriptions

This chapter describes the two types of commands available while using the various display panels described in this guide.

Line commands are used to select and perform actions on a single data set from a list of data sets. These are issued to the left of a list of files.

Mass commands are used to select and perform actions on all data sets displayed on the screen. These are issued from the `COMMAND` line.

5.1 Line Commands

Following is a list of commands that may be entered to the left of single files to be acted upon.

<u>Command</u>	<u>Description</u>
B	Invokes the ISPF browse mode if the data set is online.
D	Used to put a specific version of a file in a delete status. It is no longer a candidate for restores.
E	Invokes the ISPF edit mode.
G	Group restore, used to restore several files with the same new qualifier or volume. The options display appears once, where you can enter the NEWQUAL and/or NEWVOL fields, and all other files selected with the G command receive the same options, without reviewing the option panel.
L	Lists detailed information for the selected file.
M	Member restore from a file unloaded with the logical data mover. The restore must be into an existing PDS.
P	Invokes the shareware utility PDSAA (also known as PDS, PDS84).
Q	Restores a file and queues the request to \$RXQUMON. The logical queue name L1AA is generated so you can modify \$RXQUMON to pick up these requests. This allows operations to use the queue to prepare other restore requests and execute them (with another queue name).
R	Restores a file in batch. If the file is not authorized for batch restore, the R command is executed as the Q command.
S	Selects a file to restore. Depending on your authority you are then switched automatically to the R or Q command.
U	Updates the comment or retention field of the selected file, or puts a version of a file in undelete status.
X	Excludes a file in the display. Useful if you want to process the displayed list later using mass commands.

5.1.1 B Line Command

This command is used to display source data or output listings for the selected online file. This is the same as invoking the ISPF browse mode using option 1 of the ISPF Primary Option Menu.

Note: This is not a browse of the backup version, but a browse directly on the online version of the data set.

5.1.2 D Line Command

Entering D to the left of a displayed file displays a screen similar to the following.

```
L1AAP011 ----- CA-ASM2 EXTENDED DELETE IPC ENTRY-----
COMMAND ==>

Delete ARCH entry

DSNAME      ==> Userid.CAI.CA7.ARF

User = Userid
Time = 13:05
Date = 11/16/96
Date = 96320
      ( 0001      )

VOLSER      ==> MV8002
TAPEVOL     ==> ASM529
FILESEQ     ==> 036
LSTUS       ==> 12-26-96
BACKUPDATE  ==> 01-17-96
BACKUPTIME  ==> 18:03
RETPD       ==> 0084
RELOADFLAG  ==> R
BACKUPTYPE  ==> ARCH
REASON      ==> USER
SYSID       ==>

Press Enter to continue PF3 to cancel request
```

This option can be used to put a specific version of a file in a logical delete status in the IPC. Logical delete means that this version becomes eligible to be removed from the IPC by the next CA-ASM2 maintenance job, and in the meantime is not a candidate for automatic selection by IXR, \$RA or \$RB requests.

A file that is in delete status can be reset to undelete by the line command U (Update).

5.1.3 E Line Command

This command is used to create or change source data for the selected online file. This is the same as invoking the ISPF edit mode using option 2 of the ISPF Primary Option Menu.

Note: This is not an edit of the backup version, but an edit of the online version of the data set.

5.1.4 G Line Command

Entering G to the left of a displayed file displays a screen similar to the following.

```
L1AAP006 ----- CA-ASM2 EXTENDED GROUP RESTORE-----
COMMAND ===>

ASM2 GROUP Restore-Reload                                User = Userid
                                                         Time = 13:00
                                                         Date = 11/16/96
                                                         Date = 96320

Enter your restore criteria:

NEWQUAL    ===>                                     (for all the datasets in this group)
REP nb QUAL ===> 1                                     (number of qualifiers replaced)
FORCE      ===> N                                     (Y,N)
NEWVOL     ===>                                     (? for volume list) (CAI804)

Press Enter to continue, PF3 to return to previous panel
```

With this option you can select several files that need to be restored, and need to have the same parameters. This panel is displayed once, where you can specify all options or parameters that are subsequently used with all files that you select with the G option. This panel is not displayed again for subsequent files.

5.1.5 L Line Command

Entering L to the left of a displayed file displays a screen similar to the following.

```

L1AAP015 ----- CA-ASM2 EXTENDED LIST IPC ENTRY -----
COMMAND ==>

List IPC information                                User = Userid
                                                    Time = 13:15
                                                    Date = 11/16/96
                                                    Date = 96320
                                                    ( 0000 )

DSNAME      ==> Userid.CAI.CA7.R30.ARFVRM

HOMEVOL     ==> MV8009          DSORG      ==> VS      KSD
TAPEVOL     ==> AS1700          FULL BKUP  ==> N
FILESEQ     ==> 061             TRACKS   ==> 00015
LAST USED   ==> 10-14-96        DEL DATE  ==>
BACKUPDATE  ==> 10-15-96        DEL BY    ==>
BACKUPTIME  ==> 17:11          RELOADFLAG ==>
RETENTION   ==> 0030           RELOADDATE ==>
UTILITY     ==> IDCAMS         RELOAD BY  ==>
REASON      ==> IBKUP          RELOADDSN  ==>
CATALOGTYPE ==> BKUP           PSEUDOVOL ==>

COMMENT     ==>

Press Enter to continue          | FILE IS ONLINE |

```

Detailed information is displayed for the listed file.

The field PSEUDOVOL is filled in only if your used pseudo volsers are indicated in the L1AAXMOD module.

If the file is in delete status, the user that deleted it and the date is shown.

5.1.6 M Line Command

Entering M to the left of a displayed file displays a screen similar to the following.

```
L1AAP019 ----- CA-ASM2 EXTENDED MEMBER RESTORE -----
COMMAND  ==>
M037          ** YOU SELECTED BATCH RESTORE **

Enter your restore criteria for member selection:
To PDS      ==> Userid.CAI.CA7.ARF.LOADLIB
Members     ==>                               ==>
            ==>                               ==>
            ==>                               ==>
            ==>                               ==>
Replace     ==> N      (Y,N)

            *** FILE IS NOT ONLINE ***

File information:                                VERSION  ==> 0000
More info ==> N                                BKDATE   ==> 12-30-96
                                              BKTIME   ==> 18:28
                                              DSORG     ==> PO
                                              CHANGED  ==>

Press Enter to continue, PF3 to cancel request, CAN to go to begin
```

The M line command restores a member from a file that was unloaded with the Logical Data Mover and not compressed. This restore must be into an existing PDS which is checked before the panel is displayed. (Normally, all archives are taken with the Logical Data Mover.)

The target PDS (To PDS) must be an existing one (this is verified). The specified member(s) may not exist in the target library, in which case the replace option must be set to Y (this is verified).

You must specify a PDS with the same DSORG as the original PDS.

Note: Files residing in the Disk Staging Area (DSA) are always in compressed format, and are not candidates for member restore.

5.1.7 P Line Command

This option invokes the shareware utility PDS.

Since there are different versions available, PDSAA is called. You can add the PDSAA alias to module PDS73 or PDS84. If this module is not available, an error message is displayed.

5.1.8 Q Line Command

The Q line command restores a file and queues the request to \$RXQUMON. The logical queue name L1AA is generated so that you can modify \$RXQUMON to pick up these requests. This allows operations to use the queue to prepare other restore requests and execute them.

```

L1AAP119 ----- CA-ASM2 EXTENDED RESTORE CRITERIA-----
COMMAND ===>

Enter your restore criteria:

NEWNAME  ===> Userid.ASM2.CNTL

ORIGVOL  ===> Y      (Y,N)
CATALOG  ===> D      (Default,Y,N,U)
NEWVOL   ===>       (? for vollist)  HOMEVOL ===> TS098A
FORCE    ===> Y      (Y: override existing file, N: don't override)

* ONLINE FILE IS NOT CHANGED AFTER THE MOST RECENT BACKUP *

File information:                                SYSID   :
                                                VERSION  : 0000
                                                BKDATE   : 12-22-96
                                                BKTIME   : 17:20
                                                DSORG    : PO
                                                CHANGED  : NO

Press Enter to continue, PF3 to cancel request, CAN to go to begin
M036      ** Your selection is set to QUEUED restore **
COMMAND ===>

```

The related VSAM parameters are only displayed if you restore a VSAM data set.

Note: The fields on this panel are explained under the topic "S Line Command".

5.1.9 R Line Command

This command is used to restore a file in batch. Only authorized for SYST, PRG2 and PRG1. Others are switched to the Q command.

```
L1AAP008 ----- CA-ASM2 EXTENDED RESTORE CRITERIA-----  
COMMAND ==>  
M037                ** You selected BATCH restore **  
  
Enter your restore criteria:  
  
NEWNAME  ==> Userid.ASM2.CNTL  
NEWQUAL  ==>                                QUALnb ==> 1      (# of qual to repl)  
ORIGVOL   ==> N      (Y,N)                   NOASSOC ==> N      (Y,N)  
                                                CATALOG ==> D      (Default,Y,N,U)  
NEWVOL    ==>          (? for vollist) HOMEVOL ==> ASM003  
FORCE     ==> Y      (Y: override existing file, N: don't overrid  
  
* ONLINE FILE IS NOT CHANGED AFTER THE MOST RECENT BACKUP *  
  
File information:                                VERSION ==> 0000  
                                                BKDATE  ==> 12-22-96  
                                                BKTIME  ==> 17:20  
                                                DSORG   ==> PO  
                                                CHANGED ==> NO  
  
Press Enter to continue, PF3 to cancel request, CAN to go to begin
```

VSAM related parameters are only displayed if a VSAM data set is being restored.

Note: The fields on this panel are explained under the topic "S line command".

5.1.10 S Line Command

Entering S to the left of a displayed file displays one of two panels, depending on your authority. If you have higher authority, the following panel is displayed. This same panel is displayed when using the R or Q line command.

```

LIAAP008 ----- CA-ASM2 EXTENDED RESTORE CRITERIA -----
COMMAND ==>
M037                ** YOU SELECTED BATCH RESTORE **

Enter your restore criteria:

NEWNAME  ==> Userid.DEVL.L1AA
NEWQUAL  ==>
ORIGVOL   ==> N      (Y,N)
NEWVOL    ==>        (? for vollist)
FORCE     ==> Y      (Y: override existing file, N: do not overrid

QUALNb   ==> 1      (# of qual to repl)
NOASSOC  ==> N      (Y,N)
CAT       ==> D      (Default,Y,N)
HOMEVOL   ==> CAI800

*****MESSAGE AREA*****

File information:
VERSION  ==> 0000
BKDATE   ==> 06-03-96
BKTIME   ==> 09:50
DSORG     ==> PO
CHANGED   ==> NO

Press Enter to continue, PF3 to cancel request, CAN to go to begin

```

VSAM related parameters are only displayed when you restore a VSAM data set.

Field Description

NEWNAME This field is filled in with the data set name selected on the previous panel. If you want to restore this file under another name, simply enter the new name.

When selecting a VSAM data set backed up with \$DEFrag, you must enter the true cluster name in this field. This must be done because the JCL generated is for the normal \$DEFrag selective restore.

The true cluster name is automatically filled in when the cluster is still online, and REXX is available.

NEWQUAL When restoring VSAM data sets, (and certainly if they have an AIX), if you want to change the first level qualifier this field must be used. This parameter changes not only the cluster name, but also the data and index portion, and if applicable, the remainder of the construct (AIX, PATH).

QUALNb Specifies the number of qualifiers to be replaced. The normal value is 1, indicating to change only the alias level.

ORIGVOL	<p>Specifies whether to generate the ORIGVOL parameter. This can be of importance for files that are by conception double in your environment (for example, system data sets that are resident and alternate resident).</p> <p>Since restore commands are generated with UDATE and UTIME parameters, the risk of selecting the wrong version or volume is minimized.</p>
NOASSOC	<p>This field can be used if you are restoring a VSAM data set that has an AIX and/or PATH. Setting this field to Y indicates to CA-ASM2 that you do not want to restore the AIX, only the base cluster.</p>
CAT	<p>Specifies when to catalog the restored file. Y indicates to catalog during restore, N indicates to not catalog, and D indicates the default (D) is cataloged if the version backed up was cataloged at the time of backup.</p>
NEWVOL	<p>Specifies the specific volser where this file is to be placed. The volser is checked for sufficient free space. This space calculation can be disabled in Profile Update.</p> <p>When this field is blank, CA-ASM2 uses the settings in the \$OPTIONS module to select the target volume.</p>
NEWVOL	<p>Specifies the new volser. Enter a ? to display another panel where you can enter selection criteria to scan all of your online volumes.</p>
HOMEVOL	<p>Indicates the disk volume where this file was allocated at the time of backup. This is a display-only field.</p>
FORCE	<p>Indicates whether the copy on disk, (if online), may be overwritten. This field is automatically set to Y if the file is online.</p>

The following screen is displayed instead of the previous one for the general user (users that have only access to files beginning with their userid).

```

L1AAP021 ----- CA-ASM2 EXTENDED RESTORE CRITERIA -----
COMMAND ==>
M037                ** YOU SELECTED BATCH RESTORE **

Enter your restore criteria:

NEWNAME  ==> Userid.CAI.CA7.ARF
NEWQUAL  ==> RQAL                QUALnb ==> RQNB (# of qual to repl)
NOASSOC  ==> N      (Y: don't restore AIX, N: restore all related AI
FORCE    ==> N      (Y: override existing file, N: don't override ex

*** FILE IS NOT ONLINE *** BUT RECATALOGED ON PSEUDO ARCVOL ***

File information:                                VERSION ==> 0000
                                                VOLSER  ==> MV8013
                                                BKDATE  ==> 09-15-96
                                                BKTIME  ==> 16:58
                                                DSORG   ==> VS
                                                CHANGED ==>

Press Enter to continue, PF3 to cancel request, CAN to go to begin

```

Pressing Enter directly invokes the \$RB command to put the request in the CA-ASM2 queue, or displays the JCL in edit mode where you can check it before submitting it. The editing of JCL is only done if your authority is PRG2, SYST or PRG1. Authority PROG has all demands directly queued.

5.1.11 U Line Command

Entering U to the left of a displayed file displays a screen similar to the following.

```
L1AAP012 ----- CA-ASM2 EXTENDED UPDATE IPC ENTRY -----
COMMAND ==>>

Update IPC information                                User = Userid
                                                    Time = 12:41
                                                    Date = 06-06-97
                                                    Date = 97157
                                                    ( 0000 )

DSNAME      ==>> Userid.CAI.CA7.ARF

VOLSER      ==>> TS098A
TAPEVOL     ==>> *DISK*
FILESEQ     ==>>
LSTUS       ==>> 05-19-97   COMMENT ==>> APPLICATION JOESBK_____
BACKUPDATE  ==>> 05-23-97
BACKUPTIME  ==>> 10:11
RETPD       ==>> 0021       RETPD   ==>> 06-27-1997 (mm-dd-yyyy)
RELOADFLAG  ==>>
BACKUPTYPE  ==>> BKUP
REASON      ==>> USER

Press Enter to continue, PF3 to cancel request
```

Use the U line command to add a comment (up to 30 characters) in the IPC for a specific file, or to change the retention period for a file. If the file and version are in delete status, it is undeleted automatically (if permitted by your administrator).

Depending on your authority, and/or Profile settings, this command is executed online or queued for batch execution.

The COMMENT and RETPD fields are filled in with the information already in the IPC.

When the COMMENT field contains a '-', it indicates no comment is available.

When the COMMENT field contains '\$MEM\$', it indicates the file was backed up by a member backup. Do **not** change this comment.

If your ASM2 administrator decided that your IPC cannot contain comments, the COMMENT field on this panel cannot be updated.

5.1.12 X Line Command

The X line command is used to delete files from the display panel so that they are not selected with subsequent mass commands which operate on the entire screen.

```
L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- ROW 1 FROM 32
COMMAND ==> Scroll ==> DATA
M097 - Use DEL command to only keep most recent version of BKUP or ARCH
CMD  DATASETNAME R VERS IPCDATE TIME T
-----
      Userid.ASM2.$RAQUEUE 0000 12-22-96 17:20 A
      Userid.ASM2.$10000.TAPE.SUPPORT 0000 12-22-96 17:20 A
      Userid.ASM2.ASM2IPC.SAVE 0000 12-22-96 17:20 A
      Userid.ASM2.ASM2JNL.SAVE 0000 12-22-96 17:20 A
      Userid.ASM2.CNTL 0000 12-22-96 17:20 A
x     Userid.ASM2.XL40.XL49.ARCH.$DUPPOOL 0000 12-22-96 17:20 A
x     Userid.ASM2.XL40.XL49.ARCH.$TAPPOOL 0000 12-22-96 17:20 A
x     Userid.ASM2.XL40.XL49.BKUP.$TAPPOOL 0000 12-22-96 17:20 A
      Userid.ASM2#DS.TEST.DSA.#000 0000 12-21-96 18:21 B
      Userid.ASM2#DS.TEST.DSA.#001 0000 12-21-96 18:05 B
      Userid.ASM2#DS.TEST.DSA.#002 0000 12-21-96 18:21 B
***** END OF ASM2 REQUEST *****
```

After selecting files not to be displayed, pressing Enter displays the panel again without files marked with an X.

```
L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- ROW 1 FROM 29
COMMAND ==> Scroll ==> DATA
CMD  DATASETNAME R VERS IPCDATE TIME T
-----
      Userid.ASM2.$RAQUEUE 0000 12-22-96 17:20 A
      Userid.ASM2.$10000.TAPE.SUPPORT 0000 12-22-96 17:20 A
      Userid.ASM2.ASM2IPC.SAVE 0000 12-22-96 17:20 A
      Userid.ASM2.ASM2JNL.SAVE 0000 12-22-96 17:20 A
      Userid.ASM2.CNTL 0000 12-22-96 17:20 A
      Userid.ASM2#DS.TEST.DSA.#000 0000 12-21-96 18:21 B
      Userid.ASM2#DS.TEST.DSA.#001 0000 12-21-96 18:05 B
      Userid.ASM2#DS.TEST.DSA.#002 0000 12-21-96 18:21 B
***** END OF ASM2 REQUEST *****
```

5.2 Mass Commands

Mass commands are entered on the command line to perform functions on all displayed files rather than a single file.

Only files that are displayed are processed using mass commands. Displayed files that were excluded by the line command X or mass command DEL are excluded from selection.

The following mass commands are available:

- CAN (CANcel)
- COM (COMment display)
- CRI (change selection CRIteria)
- DEL (DELeTe selected files from display)
- EXT (EXTended display)
- MDEL (Mass DELeTe in the IPC)
- MGEN (Mass GENeration)
- MRES (Mass RESore)
- MUPD (Mass UPDate)
- NORM (NORMal display)
- PROF (PROFile update)
- PRT (PRinT display)
- SRT (SoRT display)

5.2.1 CAN (CAncel)

In the table display panels, you can decide at any time to go back to the first panel and discard all selections that were made.

5.2.2 COM (COMment display)

Entering COM from the command line displays a panel similar to the following.

```
L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- ROW 1 OF 12
COMMAND ==>                                           Scroll ==> DATA
```

CMD	DATASETNAME	R	VERS	IPCDATE	TIME	TP
	Userid.CAI.CA7.R30.ARFVRM	0000		10-15-96	17:11	B
	CA7 FILES FOR COURSE					
	Userid.CAI.CA7.R30.ARFVRM	0001		10-13-96	17:00	B
	CA7 FILES FOR COURSE					
	Userid.CAI.CA7.R30.ARFVRM	0002		10-08-96	17:03	B
	CA7 FILES FOR COURSE					
	Userid.CAI.CA7.R30.ARFVRM.SAMPJCL	0000		10-08-96	17:03	B
	CA7 FILES FOR COURSE					
	Userid.CAI.CA7.R30.IDS	0000		10-15-96	17:11	B
	CA7 FILES FOR COURSE					
	Userid.CAI.CA7.R30.IDS	0001		10-13-96	17:00	B
	CA7 FILES FOR COURSE					
	Userid.CAI.CA7.R30.IDS	0002		10-08-96	17:03	B
	CA7 FILES FOR COURSE					
	Userid.CAI.CA7.R30.IDS.DATA	0000		10-07-96	08:04	B
	CA7 FILES FOR COURSE					
	Userid.CAI.CA7.R30.IDS.INDEX	0000		MM-DD-YY	08:04	B
	CA7 FILES FOR COURSE					

This command displays an extra line with the comment field. Typing COM a second time returns you to the original display.

5.2.3 CRI (CRIteria)

Entering CRI from the command line displays a panel similar to the following.

```

L1AAP033 ----- CA-ASM2 EXTENDED CRITERIA REDISPLAY -----
COMMAND ==>

Display/Update of all your selections                                User = Userid
                                                                    Time = 14:55
                                                                    Date = 11/16/96
TYPE  ==> B      ( A : archive, B : backup, L : both)             Date = 96320
                                                                    Auth = SYST
DSN   ==> Userid.-                                         VERSION ==> *      ==> EQ
                                                                    $OPTIONS ==> L
                                                                    ==>

VOLSER ==> *
TAPEVL ==> *
BKDT   ==> *      (mddy) ==> *      (hhmm) ==> EQ      (EQ,NE,GE,LE)
to      ==> *      (mddy) ==> *      (hhmm) ==> EQ      (EQ,NE,GE,LE)
BKTYPE ==> *      (V,U,I or * )      ==> EQ      (EQ,NE,GE,LE)

PREFIX ==> Userid.ASM2      DATE ==> AMERICAN
VPREFIX==> Userid.ASM2      RETPD ==> BASED ON UNLOAD DATE

Press Enter to continue PF1 for help

```

The panel displayed shows all of your initial selections, and the defaults for the other fields. Some of these fields can now be changed, without reaccessing the IPC.

Other data extracted from your current CA-ASM2 options are also displayed:

- The prefixes of your CA-ASM2 data sets
- The preferred date type (American or European)
- Method of retention days calculation (based on today's date or based on unload date)

5.2.4 DEL (mass DElete from display)

Entering DEL from the command line displays a panel similar to the following.

```
L1AAP014 ----- CA-ASM2 EXTENDED TABLE DELETE -----  
COMMAND ===>  
  
ASM2 DELETE TABLE PROCESSING                                User = Userid  
                                                                Time = 13:10  
                                                                Date = 11/16/96  
                                                                Date = 96320  
  
Give the number selected: ===> 6  
  
1 - Keep only the latest version (regardless backup or archive)  
2 - Keep only those with a negative retention date  
3 - Keep only files in DELETE status  
4 - Keep only ARCHIVE  
5 - Keep only BACKUP  
6 - Keep only FULL BACKUP  
7 - Keep only files with RETPD < 5  
  
Press Enter to continue or PF3 to cancel DEL processing
```

With the X line command you can exclude files one by one, but with the DEL mass command you can exclude groups of files you do not need or want to see on your display panel by choosing predefined criteria. These files are then excluded from the next mass command.

This delete does **not** affect the IPC, only the number of files that are displayed on your terminal. If you want to put files in delete status in the IPC, you can use the MDEL mass command.

5.2.5 EXT (EXTended display)

Entering EXT from the command line displays a panel similar to the following.

L1AAP004 ----- COMPUTER ASSOCIATES - ASM2 4.2 -----				ROW 1 OF 82			
COMMAND ==>				Scroll ==> DATA			
CMD	DATASETNAME		DISKVOL		R VERS	IPCDATE	TIME T
TRKS	TAPEVOL	TAPESEQ		RELDATE	LASTUSED	IPCTYPE	RETPD

	Userid.CAI.CA7.ARF				0000	10-14-96	17:50 A
00016	ASM189	051	MV8013		09-22-96	USER	0355
	Userid.CAI.CA7.ARF				0000	09-15-96	16:58 B
00016	AS1552	035	MV8013		09-12-96	IBKUP	0000
	Userid.CAI.CA7.ARF				R 0001	01-17-96	18:03 A
00016	ASM529	036	MV8002	09-12-96	12-26-96	USER	0084
	Userid.CAI.CA7.ARF				R 0002	11-07-96	08:01 A
00016	ASM576	062	MV8002	11-08-96	10-15-96	USER	- DELT
	Userid.CAI.CA7.ARF.HELP				0000	12-02-96	17:40 A
00017	ASM376	058	MV8002		11-08-96	USER	0038
	Userid.CAI.CA7.ARF.LOADLIB				0000	12-30-96	18:28 A
00029	ASM491	054	MV8007		12-08-96	USER	0066
	Userid.CAI.CA7.ARF.LOADLIB				R 0001	11-04-96	18:02 A
00029	ASM567	080	MV8007	11-07-96	10-13-96	USER	0010
	Userid.CAI.CA7.CONTROL				0000	12-06-96	18:43 A
00030	ASM596	080	MV8003		11-12-96	USER	0042
	Userid.CAI.CA7.CONTROL				0001	12-04-96	18:07 A
00030	ASM382	062	MV8003		11-12-96	USER	0040

This command places the panel in the extended mode so that two lines of data are displayed for each file, giving extended information on each.

Entering NORM on the command line of this panel causes a return to a single line display. Entering COM on the command line adds an extra line for comments in the IPC.

5.2.6 MDEL (Mass DElete)

Entering MDEL from the command line displays a panel similar to the following.

```
L1AAP023 ----- CA-ASM2 EXTENDED MASS DELETE -----  
COMMAND ==>  
  
ASM2 Mass DElete PROCESSING  
  
DELETE ALL files      ==> NO   (Yes,No)  
DELETE NOT online    ==> NO   (Yes,No)  
  
User = Userid  
Time = 14:40  
Date = 11/16/96  
Date = 96320  
  
Press Enter to continue or PF3 to cancel MDEL processing
```

MDEL selects all files that are currently displayed on your terminal. The number of displayed files can be limited by the X line command (file by file), or the DEL mass command.

MDEL places the selected files in delete status in the IPC, as opposed to the DEL command which only deletes entries from your selection list (displayed entries).

Note: MDEL has no effect on online files, only entries in the IPC.

5.2.7 MGEN (Mass GENerate)

Entering MGEN from the command line displays a panel similar to the following.

```

L1AAP025 ----- CA-ASM2 EXTENDED MASS GENERATE -----
COMMAND ==>

ASM2 Mass GENerate PROCESSING                                User = Userid
                                                             Time = 14:50
                                                             Date = 11/16/96
                                                             Date = 96320

GEN ALL files          ==> NO   (Yes,No)
GEN NOT online         ==> YES  (Yes,No)
GEN ONLY changed       ==> NO   (Yes,No)
GEN NOT restored       ==> NO   (Yes,No)
GEN ALL expired        ==> NO   (Yes,No)
GEN PSEUDO recat       ==> NO   (Yes,No)

GENERATE :           ==>
  1 - Delete NOSCRATCH commands
  2 - Delete NOSCRATCH and DEFINE on another pseudo volser
                               ==> (new pseudo volser)
                               ==> 3390 (device type)
  3 - Your own generator: (SYSIN for ASM2CMDU)
      Line1 ==>
      Line2 ==>
      Line3 ==>

Press Enter to continue or PF3 to cancel MGEN processing

```

This panel provides options to uncatalog or recatalog a list of files to another pseudo volser.

MGEN allows you to process uncataloged, archived files that are cataloged on a pseudo volser (select GEN PSEUDO recat) or to uncatalog archived files that are cataloged on a pseudo volser and recatalog them to another authorized pseudo volser. With option 3 you can generate virtually any command that you want.

You can use all variables of table L1AAT002 to generate these commands. Appendix B lists each of these variables. The generated JCL is as ASM2CMDU, but can be changed to something else.

As an example, to generate an IDCAMS delete noscratch for all files on the display and not online you could do the following.

- Enter YES in the GEN NOT online field
- Enter 3 in the GENERATE field
- Enter DELETE &L1DSN NOSCRATCH
- After entering, a display panel is shown
- PF3 generates the JCL, where you change the JCL to an IDCAMS JCL and submit it.

5.2.8 MRES (Mass REStore)

Entering MRES from the command line displays a panel similar to the following.

```

L1AAP018 ----- CA-ASM2 EXTENDED MASS RESTORE -----
COMMAND ==>

ASM2 Mass REStore                                     User = Userid
                                                        Time = 13:25
                                                        Date = 11/16/96
                                                        Date = 96320

RESTORE ALL files  ==> YES  (Yes,No) or
RESTORE NOT online ==> NO   (Yes,No) or
RESTORE ONLY changed ==> NO   (Yes,No)

NEWVOL              ==> MV8002  (? for volume list)
NEW QUALIFIER       ==>          Replaces nb qual  ==> 1
FORCE               ==> Y       (Y,N)
ORIGVOL             ==> N       (Y,N)
NOASSOC             ==> N       (Y,N)

Press Enter to continue or PF3 to cancel MASS processing

```

All files that are currently displayed on your terminal are selected for restore.

You may select to restore all files, only those not online or only files that have changed since the last backup. You can also specify general CA-ASM2 parameters such as NEWQUAL, NEWVOL, FORCE, NOASSOC or ORIGVOL.

Note: Files in logical delete status are undeleted by this operation if this option was selected in the customization program (L1AAXMOD).

Files taken by a special member backup are not selected by MRES processing even if they are on the display list. These member backups can only be selected one by one.

5.2.9 MUPD (Mass UPDate)

Entering MUPD from the command line displays a panel similar to the following.

```
L1AAP024 ----- CA-ASM2 EXTENDED MASS UPDATE -----
COMMAND ===>

ASM2 Mass UPDate PROCESSING                                User = Userid
                                                            Time = 14:45
                                                            Date = 11/16/96
                                                            Date = 96320

UPDATE ALL files      ===> NO   (Yes,No)
UPDATE NOT online     ===> NO   (Yes,No)
UPDATE ONLY changed   ===> NO   (Yes,No)
UPDATE NOT restored   ===> NO   (Yes,No)
UPDATE ALL expired    ===> NO   (Yes,No)

UPDATE      Retpd    ===>      (yyddd)
           Comment   ===>

Press Enter to continue or PF3 to cancel MUPD processing
```

MUPD selects all files that are currently displayed on your terminal. The number of displayed files can be limited by the X line command (file by file), or the DEL mass command.

Options are similar to MRES, but here you can update in mass comments in the catalog or the RETPD (retention period) of the selected files.

In addition you can select only files that have not been restored before or only files that have expired.

Note: Files in logical delete status are undeleted by this operation if this option was selected in the customization program (L1AAXMOD).

Files taken by a special member backup are not selected by MRES processing even if they are on the display list. These member backups can only be selected by selecting them one by one.

To reset an existing comment back to blanks, enter the word 'BLANKS' in the COMMENT field.

5.2.10 NORM (NORMAl display)

Entering NORM from the command line displays a panel similar to the following.

```

L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- ROW 1 OF 70
COMMAND ==>                                           Scroll ==> DATA
M097 - BKUP AND ARCH, USE COMMAND DEL TO KEEP ONLY THE MOST RECENT VERSION
  CMD      DATASETNAME                                R  VERS  IPCDATE   TIME   T
-----
      Userid.CACT.PIMLIB                                0000  01-09-96  08:00  A
      Userid.CACT.PROFILE                               0000  12-01-96  16:55  B
      Userid.CACT.PROFILE                                R  0000  08-12-96  17:30  A
      Userid.CACT.PROFILE.GK                             0000  12-27-96  08:16  A
      Userid.CAI.CAICLIB                                R  0000  11-04-96  17:48  A
      Userid.CAI.CAIISPS                                0000  12-01-96  16:55  B
      Userid.CAI.CAIISPS                                R  0000  04-24-96  18:00  A
      Userid.CAI.CAILPA                                 0000  12-02-96  17:40  A
      Userid.CAI.CAIMAC                                 0000  10-21-96  17:08  A
      Userid.CAI.CAIPROC                                0000  11-19-96  17:07  B
      Userid.CAI.CAISRC                                 0000  05-26-96  08:00  A
      Userid.CAI.JCOM.CZ260LLD                          0000  05-26-96  08:00  A
      Userid.CAI.JCOM.CZ260MLD                          0000  05-26-96  08:00  A
      Userid.CAI.PPOPTION                                R  0000  03-11-96  17:21  A
      Userid.CAI.SMPMTS                                 0000  05-26-96  08:00  A
      Userid.CAI.SMPPTS                                 0000  05-26-96  08:00  A
      Userid.CAI.SMPSCDS                                0000  05-26-96  08:00  A
      Userid.CAI.SMPSTS                                 0000  05-26-96  08:00  A
***** END OF ASM2 REQUEST *****

```

In the normal mode, only one line of information is displayed for each file resulting in twice the number of files being shown on each panel.

5.2.11 PROF (PROFile update)

The Profile Update panels are displayed by entering PROF on the command line of any ISPF display panel. A detailed description of updating your profile is discussed on page 3-4.

5.2.12 PRT (PRinT)

Entering PRT from the command line displays a panel similar to the following.

```
L1AAP030 ----- CA-ASM2 EXTENDED PRINT DESTINATION -----  
COMMAND ==>  
  
PRINT IPC panel  
  
CLASS      ==> A  
DESTINATION ==> LOCAL  
  
User = Userid  
Time = 14:50  
Date = 11/16/96  
Date = 96320  
  
(LOCAL)  
(Printerid)  
(Systemid.Userid)  
  
Press Enter to continue, PF3 to cancel this PRINT request
```

Any ISPF display panel can be printed by entering PRT on the command line which brings up a panel to select the print class and destination. The online print command is invoked to print your list directly and parameters entered are saved in your profile. If your list was sorted, the printed list is also in that order.

5.2.13 SRT (SoRT)

Entering SRT from the command line displays a panel similar to the following.

```

L1AAP020 ----- CA-ASM2 EXTENDED SORT SELECTION -----
COMMAND ==>

ASM2 SORT PROCESSING                                     User = Userid
                                                         Time = 11:05
                                                         Date = 11/16/96
                                                         Date = 96320

Give the number selected: ==> 6

1 - Backup date (ascending), backup time, datasetname and version
2 - Backup date (descending), backup time, datasetname and version
3 - Disk volser, datasetname and version
4 - Expiration days (ascending), datasetname and version
5 - Expiration days (descending), datasetname and version
6 - Datasetname, IPCdate and IPCtime (descending) DEFAULT
7 - Tape volser and file sequence
8 - Tape volser and datasetname
9 - Reload date (all files that are restored are displayed first)
10 - Comments (files with comments in the IPC are displayed first)

Press Enter to continue or PF3 to cancel SRT processing

```

SRT allows you to sort by any of the most common sort fields. Select one of the sort options and the display panel is refreshed in the order you selected. The default sort order is by data set name and backup date and time. With the SRT command, you can change this order to be sorted by:

- Backup date (ascending or descending)
- Tape volser
- Disk volser
- Backup date (ascending or descending)
- Retention period
- Restore date
- Comment in the IPC

5.3 Confirmation of Selections

Once all selections have been made, a confirmation panel is displayed showing all files selected and the requested actions as in the following example. The confirmation panel is not shown unless enabled using the "Display all selected files for restore" option in your profile. See page 3-4 for details on updating your profile.

```

L1AAP026 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- ROW 1 OF 5
COMMAND ==>                                         Scroll ==> DATA
M056 ** DISPLAY OF SELECTED FILES, JCL GENERATION WHEN PRESSING ENTER **
DATASETNAME                                VOLSER  FORCE  TYPE  BACKUP TIME
TAPE    NEW DSNAME                        NEWVOL   CMD   DELDEF NEW  QUAL
-----
   Userid.CAI.CA7.ARF                      MV8013   N    ARCH    10-14-96
ASM189                                     RELOD   NO
   Userid.CAI.CA7.ARF.LOADLIB              MV8007   N    ARCH    12-30-96
ASM491                                     DELET   NO
   Userid.CAI.CA7.CONTROL                  MV8003   N    ARCH    12-06-96
ASM596                                     UPDAT   NO
   Userid.CAI.CA7.PARMLIB                  WRK002   Y    ARCH    07-27-96
ASM239                                     MEMBR   NO
   Userid.CAI.CA7.R30.ARFVRM              MV8009   Y    BKUP    10-15-96
AS1700                                     RESTR   NO
***** END OF ASM2 REQUEST *****

```

Pressing Enter checks and processes all selected files.

All files that you requested to place in undelete status are processed together with all update and delete commands. They are displayed in edit mode before the restore commands are actually generated.

```

L1AAP017 ----- CA-ASM2 EXTENDED NEEDED TAPES -----
COMMAND ==>

Tapes that will be needed for the job that will be edited
as soon as you type Enter on this panel

User = Userid
Time = 13:20
Date = 11/16/96
Date = 96320

ASM309      ASM313      AS1447      ASM371      ASM376
ASM405      ASM444      ASM478      AS1272

Press Enter to continue, PRT to print this tape list

```


Chapter 6. Examples

This chapter contains examples of using the ISPF interface in performing various operations on data sets. While not all possibilities are shown, the examples given should give you enough of the fundamentals to be able to use the interface in your particular application. Some of the panels or messages shown in this chapter may vary somewhat from your data center since each has its own environment such as authority level and global options selected.

Examples included in this chapter are as follows:

1. Restoring a File From the Selection List (shown on page 6-2)
2. Restoring a File Using ISPF Option 3.4 (shown on page 6-7)
3. Reloading all Files Not Online (shown on page 6-12)
4. Defining an Application (shown on page 6-16)
5. Restoring an Application (shown on page 6-21)
6. Defining Specific VSAM (shown on page 6-28)
7. Restoring a Specific VSAM Data Set (shown on page 6-33)
8. Restoring From a Member Backup (shown on page 6-39)
9. Full Restore and Recovery of a Volume (shown on page 6-42)

6.1 Example 1 - Restoring a File from the Selection List

In this example, you want to restore a file that you know begins with Userid.ASM2 and has CAILIB or LOAD somewhere in its name. The data set has been archived and not recataloged to a pseudo volser, so ISPF option 3.4 cannot be used.

```

L1AAP000 ----- CA-ASM2 EXTENDED MAIN MENU -----
COMMAND ==>

    ASM2 restore selection menu                                User = Userid
                                                             Time = 07:30
    Select one of the options ==> 2                          Date = 24/08/96
                                                             Date = 96237
    0 - Profile Update                                       Appl = L1AA
    1 - Dataset or mask restore                             Msg = ISPF V.4
    2 - Multiple Datasets or Application restore             Form = European
    3 - All datasets from a specific tape volser            Auth = SYST
    4 - All files from a disk before-after a date           Syst = XAD1
    5 - All previous options together                       SMS = Y
                                                             Sec = TSS
    A - Application and Special VSAM Definitions            Opt = L
    B - Full Volume Restore and Incremental Recovery         Level= 9604
    C - Cross Reference Menu
    D - Reload-Recheck user options and security
    E - IPC backup, recovery and reporting
    F - Show some customization values
    G - Volume Space map

    Press Enter to continue, PF1 for help, PF3 end
  
```

To restore the file, the most appropriate selection would be option 2 which allows you to enter up to 3 masks or to enter an application. Selecting option 2 displays the following panel.

```

L1AAP037 ----- CA-ASM2 EXTENDED RESTORE SELECTION -----
COMMAND ==>

    TYPE ==> B      ( A : archive, B : backup, L : both)    User = Userid
                                                             Time = 07:36
                                                             Date = 24/08/96
                                                             Date = 96237

    DSNmask ==> Userid.ASM2.-                               VERSION ==> 0      ==> EQ
    ==>                                                       SORT   ==> 6      (? for opt)
    ==>

    or

    Applic. ==>                                             (? for a list of applications)

    Press Enter to continue, PF3 for Menu or PF1 for help
  
```


Since you are interested in all files beginning with Userid.ASM2, this is entered in the DSNmask field. Ending with a - indicates that anything can follow.

If you are only interested in viewing the last version, change the VERSION field from its default of * to 0 as shown.

After making the changes, press Enter and all data sets meeting your defined criteria are displayed.

```

L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 106 of 135
COMMAND ===>                                         Scroll ==> DATA

  CMD      DATASETNAME                                R  VERS  IPCDATE   TIME   T
-----
          Userid.ASM2.BKUP.LOUSER                     0000 10-01-96 03:44 B
S          Userid.ASM2.CAILIB                          0000 04-03-96 09:55 B
          Userid.ASM2.PARMLIB                         0000 04-03-96 09:55 B
          Userid.ASM2.SCRIPT                          0000 04-02-96 11:17 B
          Userid.ASM2.TABLE                           0000 17-04-96 11:23 B
***** END OF ASM2 REQUEST *****

```

This panel displays information on each data set meeting the selection criteria, including backup date and time and the restore indicator if applicable (field indicated by an R).

To obtain more detailed information about a file, enter an L (List) in the CMD field to the left of that file. To restore a file enter S (Select), as shown above, next to the file to be restored and press Enter.

A panel similar to the one that follows is displayed.

```

L1AAP119 ----- CA-ASM2 EXTENDED RESTORE CRITERIA -----
COMMAND ==>
M037              ** You selected BATCH restore **

Enter your restore criteria:

NEWNAME  ==> Userid.ASM2.CAILIB

ORIGVOL  ==> N      (Y,N)
CATALOG  ==> D      (Default,Y,N,U)
NEWVOL   ==>      (? for vollist)   HOMEVOL : UK0002
FORCE    ==> Y      (Y: override existing file, N: don't override)

*** FILE IS NOT ONLINE *** BUT RECATALOGED ON PSEUDO ARCHIV ***

File information:
                                SYSID   :
                                VERSION  : 0000
                                BKDATE   : 04-03-96
                                BKTIME   : 09:55
                                DSORG    : PO
                                CHANGED   :

Press Enter to continue, PF3 to cancel request, CAN to go to begin

```

To restore a file over the existing file you can press Enter, because all fields are set correctly. To change options or names in any of the panel fields, type over the field with the new value. Pressing Enter returns you to the following panel so that you can restore additional files.

```

L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 112 of 135
COMMAND ==>                                         Scroll ==> DATA
M001 Select other files or PF3 to generate JCL ** 1 files processed
CMD  DATASETNAME                                R VERS IPCDATE  TIME  T
-----
*R*  Userid.ASM2.CAILIB                          0000 04-03-96 09:55 B
     Userid.ASM2.PARMLIB                         0000 04-03-96 09:55 B
     Userid.ASM2.PARMLIB.$BK.$BACKUP             0000 16-03-96 08:13 B
     Userid.ASM2.SCRIPT                          0000 04-02-96 11:17 B
     Userid.ASM2.TABLE                           0000 17-04-96 11:23 B
***** END OF ASM2 REQUEST *****

```

When you have no more files to restore, press PF3 to display your selected file(s) as shown in the following.

```
L1AAP026 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 1
COMMAND ==>                                         Scroll ==> DATA
M056 ** Display of selected files, JCL generated after pressing Enter **
DATASETNAME                                VOLSER  FORCE  TYPE  BACKUP TIME
TAPE   NEW DSNAME                          NEWVOL  CMD   DELDEF NEW QUAL
-----
      Userid.ASM2.CAILIB                    UK0002   Y    BKUP   04-03-96
*DISK*                                     RESTR  N
***** END OF ASM2 REQUEST *****
```

After viewing your selected files, press Enter to begin the JCL generation. If you have edit authority, the JCL is displayed.

```

File Edit Confirm Menu Utilities Compilers Test Help
-----
ISREDDE2  SYS96237.T064811.RA000.Userid.R0036493      Columns 00001 00072
Command ==>                                         Scroll ==> CSR
***** ***** Top of Data *****
==MSG>
==MSG> M060 ** $DEFRAG AND/OR RESTORE JCL(S), 1 JOB(S) GENERATED **
==MSG>
000001 //Userid1 JOB '90600000L.Username...',
000002 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000003 //-----*
000004 //*          ASM2 PANELS : RESTORE PROCESSING
000005 //*                      : BY Userid AT 96/08/24 (96.237) 07:32
000006 //-----*
000007 //RS00      EXEC  ASM2CMDU
000008 //SYSIN      DD      *
000009 * -----
000010 * 00197 TRACKS WILL BE RESTORED FROM VOLSER *DISK*, DSORG = PO
000011 * -----
000012 $RB -
000013 UDATE(03/04/96) UTIME(09:55) -
000014 FORCE -
000015 DSNAME('Userid.ASM2.CAILIB'(-0000))
000016 /*

```

If you do not have edit authority, the generated JCL is submitted automatically. If you do have edit authority, you must submit the JCL.

Once the JCL has been submitted, and you receive a message confirming this, you can press PF3 and continue. You are notified with the results of the restore. After submitting the JCL, the selection panel is displayed. You can select another mask or enter MENU on the command line to go to the ASM2 Restore Selection menu. Pressing PF3 returns you to the ISPF Primary Option menu.

6.2 Example 2 - Restoring a File Using Option 3.4

When you want to restore a single file that you know is still online or recataloged to a pseudo volser, the easiest approach is to use ISPF option 3.4. Entering 3.4 from the ISPF Primary Option menu displays a panel similar to the following.

```
Menu RefList RefMode Utilities Help
-----
ISRUDLP                      Data Set List Utility

Option ==>

    blank Display data set list          P Print data set list
      V Display VTOC information        PV Print VTOC information

Enter one or both of the parameters below:
Dsname Level . . . Userid.DEVL.L1AA
Volume serial . .

Data set list options
Initial View . . . 1 1. Volume          Enter "/" to select option
                   2. Space             / Confirm Data Set Delete
                   3. Attrib            / Confirm Member Delete
                   4. Total

The following actions are available when the list is displayed:
Enter a "/" on the data set list command field for command prompt pop-up.
Enter TSO commands, CLIST, REXX execs, or "=" to execute previous command.
```

Enter the data set name and the selection list for that single file is displayed. For this example, a userid having all authority levels is used. This requires that JCL be received in edit mode and submitted manually.

Menu Options View Utilities Compilers Help		
ISRUDSL0 Data Sets Matching Userid.DEVL.L1AA		Row 1 of 43
Command ==>		Scroll ==> CSR
Command - Enter "/" to select action	Message	Volume
RL	Userid.DEVL.L1AA	UK0002
	Userid.DEVL.L1AA.BK960218	ARCHIV
	Userid.DEVL.L1AA.BK960415	ARCHIV
	Userid.DEVL.L1AA.BK960420	ARCHIV
	Userid.DEVL.L1AA.BK960620	ARCHIV
	Userid.DEVL.L1AA.BK960812	ARCHIV
	Userid.DEVL.L1AA.BK960830	ARCHIV
	Userid.DEVL.L1AA.BK960908	ARCHIV
	Userid.DEVL.L1AA.BK960917	ARCHIV
	Userid.DEVL.L1AA.BK961104	ARCHIV
	Userid.DEVL.L1AA.BK961128	ARCHIV
	Userid.DEVL.L1AA.BK960123	ARCHIV
	Userid.DEVL.L1AA.BK960217	ARCHIV
	Userid.DEVL.L1AA.BK960401	ARCHIV
	Userid.DEVL.L1AA.BK960617	ARCHIV
	Userid.DEVL.L1AA.BK960726	ARCHIV
	Userid.DEVL.L1AA.LEV9404.LOAD	ARCHIV

Type in one of the following commands to the left of the data set name to restore that file.

- RL to restore archive and backup files
- RA to restore **only** archived files (command RR can also be used if command RA is in use by another application)
- RB to restore **only** files that have been backed up

A message is received informing you that a search of the IPC is occurring. A panel similar to the following is then displayed which shows all of the versions of the file you have requested. Any of the line commands described in Chapter 5 may be used.

```

L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 9
COMMAND ==>                                     Scroll ==> DATA
M097 - Use DEL command to only keep most recent version of BKUP or ARCH
CMD   DATASETNAME                                R VERS IPCDATE  TIME  T
-----
S      Userid.DEVL.L1AA                            0000 04-03-96 09:55 B
      Userid.DEVL.L1AA                            0001 04-02-96 11:17 B
      Userid.DEVL.L1AA                            0002 10-01-96 03:44 B
      Userid.DEVL.L1AA                            0003 03-06-95 09:50 B
      Userid.DEVL.L1AA                            0004 14-05-95 09:57 B
      Userid.DEVL.L1AA                            0005 17-04-95 11:23 B
      Userid.DEVL.L1AA                            0006 06-04-95 03:57 B
      Userid.DEVL.L1AA                            0007 23-03-95 04:18 B
      Userid.DEVL.L1AA                            0008 22-03-95 13:40 B
***** END OF ASM2 REQUEST *****

```

To restore a particular version, type S in the CMD field desired. In the above example, an S has been entered to select the 0001 (-1) version.

Pressing Enter displays the next panel. On this panel, several options can be overridden.

```

L1AAP119 ----- CA-ASM2 EXTENDED RESTORE CRITERIA -----
COMMAND ==>
M037                                     ** You selected BATCH restore **

Enter your restore criteria:

NEWNAME   ==> Userid.DEVL.L1AA.TEMP

ORIGVOL   ==> N      (Y,N)
CATALOG   ==> D      (Default,Y,N,U)
NEWVOL    ==>       (? for vollist)   HOMEVOL : UK0002
FORCE     ==> Y      (Y: override existing file, N: don't override)

*** FILE IS ONLINE ***

File information:                                SYSID   :
                                                VERSION  : 0001
                                                BKDATE   : 04-02-96
                                                BKTIME   : 11:17
                                                DSORG    : PO
                                                CHANGED  : YES

Press Enter to continue, PF3 to cancel request, CAN to go to begin

```

To restore the file under another name, type over the displayed name with the desired name. You may also select a new disk volume to restore to.

Since this file is still online, the FORCE parameter is automatically set to YES, indicating that the existing file is overwritten.

Pressing Enter returns you to the display panel where you can select another version of the data set to restore. The *R* in the following example indicates that version -1 has been selected for restore.

```
L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 2 of 9
COMMAND ==>                                     Scroll ==> DATA
M001 Select other files or PF3 to generate JCL ** 1 files processed
  CMD   DATASETNAME                                R  VERS  IPCDATE   TIME   T
-----
    *R* Userid.DEVL.L1AA                            0001  04-02-96  11:17  B
        Userid.DEVL.L1AA                            0002  10-01-96  03:44  B
        Userid.DEVL.L1AA                            0003  03-06-95  09:50  B
        Userid.DEVL.L1AA                            0004  14-05-95  09:57  B
        Userid.DEVL.L1AA                            0005  17-04-95  11:23  B
        Userid.DEVL.L1AA                            0006  06-04-95  03:57  B
        Userid.DEVL.L1AA                            0007  23-03-95  04:18  B
        Userid.DEVL.L1AA                            0008  22-03-95  13:40  B
***** END OF ASM2 REQUEST *****
```

JCL is now required to do the restore. If your authority specifies that you use queued reload, your request is queued at this point.

To initiate the generation of JCL, enter PF3 which displays a list of all selected files.


```

LIAAP026 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 1
COMMAND ==>                                     Scroll ==> DATA
M056 ** Display of selected files, JCL generated after pressing Enter **
  DATASETNAME                                VOLSER  FORCE  TYPE  BACKUP TIME
  TAPE    NEW DSNAME                          NEWVOL  CMD   DELDEF NEW QUAL
-----
      Userid.DEVL.L1AA                        UK0002   Y    BKUP   04-02-96
*DISK* Userid.DEVL.L1AA.TEMP                    RESTR   N
***** END OF ASM2 REQUEST *****

```

After confirming that the files displayed are the ones to be restored, press Enter to display the JCL.

When the job has ended, you receive a message indicating that the job has ended normally (or not).

```

File Edit Confirm Menu Utilities Compilers Test Help
-----
ISREDDE2  SYS96237.T064811.RA000.Userid.R0036493      Columns 00001 00072
Command ==>                                     Scroll ==> CSR
***** ***** Top of Data *****
==MSG>
==MSG> M060 ** $DEFRAG AND/OR RESTORE JCL(S), 1 JOB(S) GENERATED **
==MSG>
000001 //Userid1 JOB '90600000L.Username...',
000002 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000003 //*-----*
000004 //*      ASM2 PANELS : RESTORE PROCESSING
000005 //*                      : BY Userid AT 96/08/24 (96.237) 07:37
000006 //*-----*
000007 //RS00      EXEC  ASM2CMDU
000008 //SYSIN      DD      *
000009 * -----
000010 * 00345 TRACKS WILL BE RESTORED FROM VOLSER *DISK*, DSORG = PO
000011 * -----
000012 $RB -
000013 NEWNAME('Userid.DEVL.L1AA.TEMP') -
000014 UDATE(02/04/96) UTIME(11:17) -
000015 FORCE -
000016 DSNAME('Userid.DEVL.L1AA'(-0001))

```

After the JCL has been submitted, you can press PF3 until you are back to the ASM2 Restore Selection menu.

6.3 Example 3 - Reloading all Files Not Online.

This example assumes that you have a monthly application that uses all files beginning with VN9000. Some files may be archived, and you want to restore all archived files that are currently not online.

From the ASM2 Restore Selection menu, select option 2.

```
L1AAP037 ----- CA-ASM2 EXTENDED RESTORE SELECTION -----
COMMAND ==>

      TYPE    ==> A      ( A : archive, B : backup, L : both)      User = Userid
                                                                Ti
                                                                Date = 24/08/96
                                                                Date = 96237

DSNmask ==> VN9000.-      VERSION ==> 0      ==> EQ
                        ==>                      SORT    ==> 6      (? for opt)
                        ==>

or

Applic. ==>                      (? for a list of applications)

Press Enter to continue, PF3 for Menu or PF1 for help
```

On this selection panel specify your selection parameters.

- Only archives (TYPE = A)
- All files beginning with VN9000 (DSNmask = VN9000.-)
- Only the last version (VERSION = 0)

Pressing Enter displays the next panel.

```

LIAAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 28
COMMAND ==> MRES                                     Scroll ==> DATA
M012 - ARCHIVE - Catalog - (PF1 for help)
CMD   DATASETNAME                                     R  VERS  IPCDATE  TIME  T
-----
VN9000.QC.PRM1KSDS.CLUSTER                          0000 26-02-96 15:14 A
VN9000.QC.PRM1MV.CLUSTER                             0000 26-02-96 15:14 A
VN9000.QC.STNAIX1.AIX                                0000 12-02-96 20:41 A
VN9000.QC.STNAIX2.AIX                                0000 01-02-96 14:48 A
VN9000.QC.STNAIX4.AIX                                0000 12-02-96 20:41 A
VN9000.QC.STNAIX5.AIX                                0000 01-02-96 14:48 A
VN9000.QC.STNAIX6.AIX                                0000 01-02-96 14:48 A
VN9000.QC.STNAIX8.AIX                                0000 12-02-96 20:41 A
VN9000.QC.STNBAS1                                     0000 12-02-96 20:41 A
VN9000.QC.STNBAS2                                     0000 01-02-96 14:48 A
VN9000.QC.STNBAS4                                     0000 12-02-96 20:41 A
VN9000.QC.STNBAS5                                     0000 01-02-96 14:48 A
VN9000.QC.STNBAS6                                     0000 01-02-96 14:48 A
VN9000.QC.STNBAS8                                     0000 12-02-96 20:41 A
VN9000.QC.STN1KSDS.CLUSTER                          0000 01-02-96 14:48 A
VN9000.QC.STN1MV.CLUSTER                            0000 01-02-96 14:48 A
VN9000.QC.STN2KSDS.CLUSTER                          0000 01-02-96 14:48 A
VN9000.QC.STN2MV.CLUSTER                            0000 01-02-96 14:48 A
VN9000.QC.STN3KSDS.CLUSTER                          0000 01-02-96 14:48 A

```

The above panel lists all files that have been archived meeting the selection criteria. Files to be restored can be selected by typing an S to the left of each file.

If all files **displayed** are to be restored, the MRES (mass restore) command can be used on the command line as shown in the example panel above.

Pressing Enter displays the ASM2 Mass Restore panel.

```

LIAAP018 ----- CA-ASM2 EXTENDED MASS RESTORE -----
COMMAND ==>

ASM2 Mass REStore                                     User = Userid
                                                    Time = 07:40
                                                    Date = 24/08/96
                                                    Date = 96237

RESTORE ALL files   ==> NO   (Yes,No) or
RESTORE NOT online  ==> YES  (Yes,No) or
RESTORE ONLY changed ==> NO   (Yes,No)

NEWVOL              ==>      (? for volume list)
NEW QUALIFIER       ==>
  Replaces nb qual  ==> 1
FORCE               ==> Y    (Y,N) (for ALL selected files)
ORIGVOL             ==> N    (Y,N)
NOASSOC            ==> N    (Y,N)

Press Enter to continue or PF3 to cancel MASS processing

```

In the example, only files that are not online are to be selected. The system ensures that only files not on line are restored.

6.3 Example 3 - Reloading all Files Not Online.

Press Enter to continue.

```
L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 28
COMMAND ==>                                     Scroll ==> DATA
M001 Select other files or PF3 to generate JCL ** 22 files processed
CMD    DATASETNAME                                R  VERS  IPCDATE  TIME  T
-----
 *R* VN9000.QC.PRM1KSDS.CLUSTER                    0000 26-02-96 15:14 A
 *R* VN9000.QC.PRM1MV.CLUSTER                      0000 26-02-96 15:14 A
 *R* VN9000.QC.STNAIX1.AIX                          0000 12-02-96 20:41 A
 *R* VN9000.QC.STNAIX2.AIX                          0000 01-02-96 14:48 A
 *R* VN9000.QC.STNAIX4.AIX                          0000 12-02-96 20:41 A
 *R* VN9000.QC.STNAIX5.AIX                          0000 01-02-96 14:48 A
 *R* VN9000.QC.STNAIX6.AIX                          0000 01-02-96 14:48 A
 *R* VN9000.QC.STNAIX8.AIX                          0000 12-02-96 20:41 A
 *R* VN9000.QC.STNBAS1                             0000 12-02-96 20:41 A
 *R* VN9000.QC.STNBAS2                             0000 01-02-96 14:48 A
 *R* VN9000.QC.STNBAS4                             0000 12-02-96 20:41 A
 *R* VN9000.QC.STNBAS5                             0000 01-02-96 14:48 A
 *R* VN9000.QC.STNBAS6                             0000 01-02-96 14:48 A
 *R* VN9000.QC.STNBAS8                             0000 12-02-96 20:41 A
 *R* VN9000.QC.STN1KSDS.CLUSTER                    0000 01-02-96 14:48 A
 *R* VN9000.QC.STN1MV.CLUSTER                      0000 01-02-96 14:48 A
 *R* VN9000.QC.STN2KSDS.CLUSTER                    0000 01-02-96 14:48 A
 *R* VN9000.QC.STN2MV.CLUSTER                      0000 01-02-96 14:48 A
 *R* VN9000.QC.STN3KSDS.CLUSTER                    0000 01-02-96 14:48 A
```

This panel shows that all files are **selected** for restore and thus not online at present.

Note in the upper right corner of the panel that 28 files were selected in the IPC and that of these, 22 are to be restored as they are not online.

To obtain the display of selected files, press PF3.

```
L1AAP026 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 22
COMMAND ==>                                     Scroll ==> DATA
M056 ** Display of selected files, JCL generated after pressing Enter **
DATASETNAME                                VOLSER  FORCE  TYPE  BACKUP TIME
TAPE    NEW DSNAME                        NEWVOL  CMD   DELDEF NEW  QUAL
-----
      VN9000.QC.PRM1KSDS.CLUSTER            SJ0001    N   ARCH    26-02-96
ASH062 VN9000.QC.PRM1KSDS.CLUSTER            RELOD    N
      VN9000.QC.PRM1MV.CLUSTER            SJ0001    N   ARCH    26-02-96
ASH062 VN9000.QC.PRM1MV.CLUSTER            RELOD    N
      VN9000.QC.STNAIX1.AIX                SJ0005    N   ARCH    12-02-96
ASH064 VN9000.QC.STNAIX1.AIX                RELOD    N
      VN9000.QC.STNAIX2.AIX                SJ0005    N   ARCH    01-02-96
ASH064 VN9000.QC.STNAIX2.AIX                RELOD    N
      VN9000.QC.STNAIX4.AIX                SJ0005    N   ARCH    12-02-96
ASH064 VN9000.QC.STNAIX4.AIX                RELOD    N
      VN9000.QC.STNAIX5.AIX                SJ0005    N   ARCH    01-02-96
ASH064 VN9000.QC.STNAIX5.AIX                RELOD    N
      VN9000.QC.STNAIX6.AIX                SJ0005    N   ARCH    01-02-96
ASH064 VN9000.QC.STNAIX6.AIX                RELOD    N
      VN9000.QC.STNAIX8.AIX                SJ0005    N   ARCH    12-02-96
ASH064 VN9000.QC.STNAIX8.AIX                RELOD    N
      VN9000.QC.STNBAS1                    SJ0001    N   ARCH    12-02-96
ASH064 VN9000.QC.STNBAS1                    RELOD    N
```

The panel shown above is displayed to give a final viewing of all your selected files to be restored before submitting the JCL.

Press Enter to see and edit the JCL.

```

File Edit Confirm Menu Utilities Compilers Test Help
-----
ISREDDE2  SYS96237.T064811.RA000.Userid.R0036493      Columns 00001 00072
Command ==>                                           Scroll ==> CSR
***** ***** Top of Data *****
==MSG>
==MSG> M060 ** $DEFRAG AND/OR RESTORE JCL(S), 2 JOB(S) GENERATED **
==MSG>
000001 //Userid1 JOB '90600000L.Username...',
000002 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000003 //*-----*
000004 //*      ASM2 PANELS : RELOAD PROCESSING
000005 //*      : BY Userid AT 96/08/24 (96.237) 07:41
000006 //*-----*
000007 //RS00      EXEC  ASM2CMDU
000008 //SYSIN      DD      *
000009 * -----*
000010 * 00031 TRACKS WILL BE RESTORED FROM VOLSER ASH062, DSORG = VS
000011 * -----*
000012 $RA -
000013 UDATE(02/26/93) UTIME(15:14) -
000014 DSNAME('VN9000.QC.PRM1MV.CLUSTER'(-0000))
000015 * -----*
000016 * 00016 TRACKS WILL BE RESTORED FROM VOLSER ASH062, DSORG = VS

```

The comment in the JCL shows 2 jobs generated. The reason for 2 jobs is that all requested files were archived on two tapes.

This JCL must be submitted manually. After submitting the JCL, enter PF3 to return to previous panels where you can do another restore or return to other ISPF applications.

6.4 Example 4 - Defining an Application

To define an application or update an existing application, select option A on the ASM2 Restore Selection menu to display the following panel.

```

LIAP089 ----- CA-ASM2 EXTENDED SPECIAL DEFINITIONS -----
COMMAND  ==>

ASM2 special definitions                                User = Userid
                                                    Time = 07:43
Special definitions selection ==> 1                Date = 24/08/96
                                                    Date = 96237

1 - Application definitions
2 - VSAM exceptions table definition

Press Enter to continue, PF1 for help, PF3 end

```

Select option 1 and press Enter to display the Application Definitions panel.

```
L1AAP083 ----- CA-ASM2 EXTENDED MESSAGE -----  
COMMAND ==>  
  
User = Userid  
Time = 07:43  
Date = 24/08/96  
Date = 96237  
  
APPLICATION DEFINITIONS - L1AAT004  
  
TABLE ONLY EXIST IN YOUR Userid.ISPF.ISPPROF  
WE WILL UPDATE IN THIS LIB
```

Press Enter to continue, PF3 command to goback


```

L1AAP054 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 5
COMMAND ==>                                         Scroll ==> DATA

CMD  APPLICATION (opt: Select, Del, Rsvp, Bkp) FILES
-----
S    ASM2
      ALL ASM2 DATASETS AND DIFFERENT IPCS
      DEVL                                13
      ASM2 AND UTILITIES
      EMPTY
      SAMPLE TO FIND NO ENTRIES
      ISPF
      MY TOP 10 LIBRARIES
      RSVP
      TEST WITH DIFFERENT ENTRIES
***** Bottom of data *****

```

All existing, defined applications are displayed. You can select any of the applications and update the definitions. After selecting an application, press Enter to display the next panel.

```

L1AAP053 ----- CA-ASM2 EXTENDED APPLICATION ADD-UPATE -----
COMMAND ==>
M500 ** Application ASM2 exists, switch to update mode **

APPLICATION ==> ASM2                                User = Userid
                                                    Time = 07:44
                                                    Date = 24/08/96
Comment ==> ALL ASM2 DATASETS AND DIFFERENT IPCS    Date = 96237

DSN(s) ==> Userid.ASM2.-
        ==> Userid.ASM241.-
        ==> Userid.ASM2AGF.-
        ==> Userid.ASM2NBB.-
        ==>
        ==>
        ==>
        ==>
        ==>
        ==>

Files ==> (number of files that MUST be selected in RESTORE phase)
          (0 or blank means NO TEST)

Press Enter to continue PF3 to Quit

```

Do not use masks with an incomplete alias, as this gives poor performance during the restore selection phase due to the number of records that must be read in the IPC.


```

Menu Utilities Compilers Help
-----
ISRBROBA Userid.RSVP.LIST Line 00000000 Col 001 080
Command ==> Scroll ==> PAGE
***** Top of Data *****
RS0A03 CA-RSVP VERSION 1.0 $RSVP TRK LEVEL ( Userid )
DSNAME VOLUME DSCOUNT ALLOC USED L
Userid..ASM2.ARCH.INCMODEL UK0001 0 0 1
Userid..ASM2.ASM2IPC UK0001 0 0 0
Userid..ASM2.ASM2IPC.BKUPMODL UK0001 0 0 1
Userid..ASM2.ASM2IPC.DATA UK0001 1960 1960 0
Userid..ASM2.ASM2IPC.INDEX UK0001 30 30 0
Userid..ASM2.ASM2IPC.JXTRMODL UK0001 0 0 1
Userid..ASM2.ASM2JNL UK0004 0 0 0
Userid..ASM2.ASM2JNL.DATA UK0004 30 30 0
Userid..ASM2.ASM2MNT.ASMPRINT.G0003V00 UK0001 3 3 0
Userid..ASM2.DSCB UK0002 0 0 1
TOTAL 10 2013 2013
***** Bottom of Data *****

```

Option R invokes RSVP online. RSVP checks all of your defined masks, with the exception of those with an incomplete alias, and matches them with the online files. RSVP is invoked with the parameters LEVEL and LIKE. The parameter VOL() is not used which improves performance. This means that NOT CATALOGED files are not selected.

You can check here the number of files in your application, and if needed adapt this number in the application definition.

```

Menu Utilities Compilers Help
-----
ISRBROBA SYS96237.T064811.RA000.Userid.R0036493 Line 00000000 Col 001 080
Command ==> Scroll ==> PAGE
***** Top of Data *****
PRINT OF ASM2 APPLICATION TABLE WITH CONNECTED FILES

APPLICATION      DSNAME (OR MASK)
-----
COMMENT: ALL ASM2 DATASETS AND DIFFERENT IPCS
===ASM2===      Userid.ASM2.-
FILES:          Userid.ASM241.-
                Userid.ASM2AGF.-
                Userid.ASM2NBB.-
-----
COMMENT: ASM2 AND UTILITIES
===DEVL===      Userid.DEVL.L1AA
FILES: 13       Userid.DEVL.UTIL.-
-----
COMMENT: SAMPLE TO FIND NO ENTRIES
===EMPTY===     NOTHING.-
FILES:
-----

```

Option P prints all defined applications (if the data set name was an *).

```
L1AAP056 ----- COMPUTER ASSOCIATES - ASM2 4.2 -----  
COMMAND ==>  
  
Move APPLICATION Definitions Back To An ISPTLIB  
  
We took the table from library:  
==> Userid.ISPF.ISPPROF  
  
We updated the table in:  
==> Userid.ISPF.ISPPROF  
  
We will move the new updated APPLICATION table to (change if needed):  
==> CAI.ISPTLIB  
  
  
Press Enter to continue PF3 to bypass COPY
```

Pressing PF3 moves the updated table back from where it originated. If needed you can change the target library name.

6.5 Example 5 - Restoring an Application

To restore an application, select option 2 from the ASM2 Restore Selection menu to display the following panel.

```

LIAAP037 ----- CA-ASM2 EXTENDED RESTORE SELECTION -----
COMMAND ===>

      TYPE    ==> B      ( A : archive, B : backup, L : both)      User = Userid
                                                                Time = 07:47
                                                                Date = 24/08/96
                                                                Date = 96237

      DSNmask ==>
                                                                VERSION ==> 0      ==> EQ
                                                                SORT   ==> 6      (? for opt)
                                                                ==>

      or

      Applic. ==> ?      (? for a list of applications)

      Press Enter to continue, PF3 for Menu or PF1 for help

```

Enter the application name or a ? to view valid application names. Press Enter to display the application(s).

```

LIAAP057 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 5
COMMAND ==>                                           Scroll ==> DATA

  CMD  APPLICATION ( S to select, B to Browse)  FILES
-----
      ASM2
      ALL ASM2 DATASETS AND DIFFERENT IPCS
      DEVL                                     13
      ASM2 AND UTILITIES
      EMPTY
      SAMPLE TO FIND NO ENTRIES
      ISPF
      MY TOP 10 LIBRARIES
      RSVP
      TEST WITH DIFFERENT ENTRIES
***** END OF ASM2 REQUEST *****

```

After selecting an application, press Enter to confirm the selected application.

After confirming the following panel, you can change the TYPE (Archive or Backup). The VERSION parameter is not taken into account.

```

L1AAP037 ----- CA-ASM2 EXTENDED RESTORE SELECTION -----
COMMAND ===>

TYPE      ===> B      ( A : archive, B : backup, L : both)
                                                    User = Userid
                                                    Time = 07:47
                                                    Date = 24/08/96
                                                    Date = 96237

DSNmask ===>
=====
=====
=====
VERSION  ===> 0      ===> EQ
SORT     ===> 6      (? for opt)

or

Applic.  ===> DEVL      (? for a list of applications)

Press E  [ M111 ** Application DEVL selected, please continue ** ]

```

If enabled in your profile, the following confirmation panel is displayed.

```

L1AAP022 ----- CA-ASM2 EXTENDED APPLICATION DISPLAY -----
COMMAND ===>

Mask(s) that will be selected (if you Enter):
APPLICATION  ===> DEVL
                                                    User = Userid
                                                    Time = 07:47
                                                    Date = 24/08/96
                                                    Date = 96237

DSN(s) ===> Userid.DEVL.L1AA
=====
=====
=====
=====
=====
=====
=====
=====
=====
=====
=====
=====
=====

Files  ===> 13      You selected BACKUP selection
Comment ===> ASM2 AND UTILITIES

Press Enter to confirm search, PF3 to CANCEL search

```

The purpose of the above panel is to confirm the defined masks for the selected application.

Pressing Enter brings up the next panel which displays all backup dates for the selected application.

```

L1AAP105 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 16
COMMAND ==> Scroll ==> DATA
M159 ** Backup dates for application DEVL , use S to select **
CMD   UNL DATE   TIME   #FIL  COMMENT ( application DEVL   )
-----
S     04-03-96   09:55   12    AFTER UPDATE ASM2
      04-02-96   11:17   12    BEFORE UPDATE ASM2
      10-01-96   03:44   12    AFTER UPDATE CA7
***** Bottom of data *****

```

Before the file details are displayed, all of the DATE, TIME and COMMENT entries are sorted.

Multiple entries for the same date are possible so the COMMENT field is used to create a different backup set. This comment is created by a user backup (ASM2CMDU RSVP step followed by an ASM2EXPB or ASM2DEXB step).

```

L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 10 of 99
COMMAND ==> MRES Scroll ==> DATA
M163 ** Appl DEVL (use MRES to restore or PF3 for reselect) **
CMD   DATASETNAME R VERS IPCDATE TIME T
-----
Userid.DEVL.UTIL 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.HELP 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.ISPCLIB 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.ISPMLIB 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.ISPPLIB 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.ISPSLIB 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.ISPTLIB 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.LOAD 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.MACRO 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.MACR01 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.PDS84 0000 04-03-96 09:55 B
Userid.DEVL.UTIL.SOURCE 0000 04-03-96 09:55 B
***** END OF ASM2 REQUEST *****

```

After reviewing this list to ensure correct correct backup date and time of files that you want to restore, you can use mass commands to operate on all files displayed.

To restore these files, enter MRES on the COMMAND line, as shown.

Press Enter to display the next panel.

```

L1AAP018 ----- CA-ASM2 EXTENDED MASS RESTORE -----
COMMAND ==>

ASM2 Mass REStore                                     User = Userid
                                                         Time = 07:48
                                                         Date = 24/08/96
                                                         Date = 96237

RESTORE ALL files  ==> YES (Yes,No) or
RESTORE NOT online ==> NO  (Yes,No) or
RESTORE ONLY changed ==> NO (Yes,No)

NEWVOL              ==>          (? for volume list)
NEW QUALIFIER       ==>
  Replaces nb qual  ==> 1
FORCE               ==> Y       (Y,N) (for ALL selected files)
ORIGVOL             ==> N       (Y,N)
NOASSOC            ==> N       (Y,N)

Press Enter to continue or PF3 to cancel MASS processing

```

The above panel allows you to further define which files to restore. You must select one of the top three fields as YES. In the example, all files have been selected to be restored. If needed, you can enter other criteria such as NEWVOL, NEWQUAL, FORCE or NOASSOC.

Press Enter to display the next panel.

```

L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 10 of 99
COMMAND ==>                                           Scroll ==> DATA
M001 Select other files or PF3 to generate JCL ** 12 files processed
CMD   DATASETNAME                                     R VERS IPCDATE  TIME  T
-----
*R* Userid.DEVL.UTIL                                0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.HELP                          0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.ISPCLIB                       0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.ISPMLIB                       0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.ISPPLIB                       0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.ISPSLIB                       0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.ISPTLIB                       0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.LOAD                          0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.MACRO                          0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.MACRO1                        0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.PDS84                         0000 04-03-96 09:55 B
*R* Userid.DEVL.UTIL.SOURCE                        0000 04-03-96 09:55 B
***** END OF ASM2 REQUEST *****

```

This panel confirms the files that have been selected for restore (*R* indicates each file selected for restore). PF3 invokes the JCL generation.

The system checks to ensure that you have selected the same number of files as defined by the application. If they are not the same, you receive a warning panel similar to the following.

```
L1AAP046 ----- CA-ASM2 EXTENDED APPLICATION WARNING -----  
COMMAND ===>  
  
APPLICATION restore Warning                                User = Userid  
                                                         Time = 07:48  
                                                         Date = 24/08/96  
                                                         Date = 96237  
  
** ATTENTION **  
  
You only have 12 files selected  
  
But the APPLICATION Defintions indicated that you need 13 files  
  
  
  
Press Enter to continue  PF3 to cancel request
```

After viewing the warning message you can use PF3 to return to prior panels and correct the problem, or press Enter to continue (if you had no warning).

If enabled in your profile, the following panel is displayed.

```

L1AAP026 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 12
COMMAND ==>                                         Scroll ==> DATA
M056 ** Display of selected files, JCL generated after pressing Enter **
  DATASETNAME
  TAPE   NEW DSNAME                                VOLSER  FORCE  TYPE  BACKUP TIME
                                         NEWVOL  CMD   DELDEF NEW QUAL
-----
      Userid.DEVL.UTIL                            UK0001   Y    BKUP   04-03-96
*DISK*  Userid.DEVL.UTIL                            RESTR   N
      Userid.DEVL.UTIL.HELP                        UK0002   Y    BKUP   04-03-96
*DISK*  Userid.DEVL.UTIL.HELP                      RESTR   N
      Userid.DEVL.UTIL.ISPCLIB                     UK0002   Y    BKUP   04-03-96
*DISK*  Userid.DEVL.UTIL.ISPCLIB                   RESTR   N
      Userid.DEVL.UTIL.ISPMLIB                     UK0002   Y    BKUP   04-03-96
*DISK*  Userid.DEVL.UTIL.ISPMLIB                   RESTR   N
      Userid.DEVL.UTIL.ISPPLIB                     UK0002   Y    BKUP   04-03-96
*DISK*  Userid.DEVL.UTIL.ISPPLIB                   RESTR   N
      Userid.DEVL.UTIL.ISPSLIB                     UK0002   Y    BKUP   04-03-96
*DISK*  Userid.DEVL.UTIL.ISPSLIB                   RESTR   N
      Userid.DEVL.UTIL.ISPTLIB                     UK0002   Y    BKUP   04-03-96
*DISK*  Userid.DEVL.UTIL.ISPTLIB                   RESTR   N
      Userid.DEVL.UTIL.LOAD                        UK0002   Y    BKUP   04-03-96
*DISK*  Userid.DEVL.UTIL.LOAD                      RESTR   N
      Userid.DEVL.UTIL.MACRO                       UK0001   Y    BKUP   04-03-96
*DISK*  Userid.DEVL.UTIL.MACRO                     RESTR   N

```

At this point you may exclude any of the selected files by placing an X before the file, or cancel all selections by entering CAN on the command line. After confirming your selections, press Enter to display the JCL. Edit the JCL as necessary and submit.


```

ISREDDE - Userid.SPFTMP2.CNTL ----- COLUMNS 001 072
COMMAND ==>                                SCROLL ==> PAGE
***** ***** TOP OF DATA *****
==MSG>
==MSG> M060 ** $DEFRAG AND/OR RESTORE JCL(S), 4 JOB(S) GENERATED **
==MSG>
000001 //Userid1 JOB 90600000L.Username...,
000002 //      TYPRUN=HOLD,
000003 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000004 //*
000005 //JOBLIB      DD DSN=Userid.ASM2.CAILIB,
000006 //              DISP=SHR
000007 //*-----*
000008 //*
000009 //*      ASM2 PANELS : RESTORE PROCESSING
000010 //*                      : BY Userid AT 96/06/29 (96.180) 06:06
000011 //*
000012 //*-----*
000013 //RS00      EXEC ASM2CMDU
000014 //RXQUEUE DD DUMMY
000015 //ARCHBKLG DD DUMMY
000016 //AMSOUT DD SYSOUT=*
000017 //OPTIONS DD DUMMY
000018 //SYSIN DD *
000019 * -----*
000020 * 00221 TRACKS WILL BE RESTORED FROM VOLSER *DISK*, DSORG = PO
000021 * -----*
000022 $RB -
000023 UDATE(05/14/96) UTIME(09:57) -
000024 FORCE -
000025 DSNAME(Userid.DEVL.UTIL.MACRO(-0001))
000026 /*
000027 /* -----*
000028 /* -- SEND MESSAGE THAT ALL IS OK -- *
000029 /* -----*
000030 //SEND0 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(0,NE)
000031 //SYSTSPRT DD SYSOUT=*
000032 //SYSTSIN DD *
000033 SEND *** FILE(S) ARE RESTORED ***,USER(Userid),LOGON
000034 /*
000035 /* -----*
000036 /* -- SEND MESSAGE THAT THERE WAS A PROBLEM -- *
000037 /* -----*
000038 //SEND1 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(0,EQ,SEND0)
000039 //SYSTSPRT DD SYSOUT=*
000040 //SYSTSIN DD *

```

Note the message (M060) stating that 4 jobs were generated. This may be because the files were on 4 tapes, or if the backup was made to disk, the "number of jobs" parameter in your profile was greater than 1. This calculates the total amount of tracks to restore, and divides this amount by the number of jobs that are permitted to be generated. As a result you obtain different jobs with about the same amount of tracks to restore.

The VSAM table L1AAT006 is searched in your ISPTLIB concatenation. The first version found is moved to your ISPTABL library. If this library also contains a version of this table, the update date and time is compared and the most recent version used.

Press Enter to display the next panel.

----- COMPUTER ASSOCIATES - ASM2 4.2 -----

COMMAND ==>

TYPE ==> L

(A : add, D : delete, L : list)
(P : print, V : verify all)

User = Userid
Time = 07:50
Date = 24/08/96
Date = 96237

VSAM ==> *

(vsam or generic *)

Default PDS with Delete-Define members:
==> Userid.BRU.CNTL

Press Enter to continue, PF3 to save, PF1 for help

The PDS name that is filled in is the name where most of the Delete/Defines are located. This PDS name can be changed when defining a specific VSAM.

----- COMPUTER ASSOCIATES - ASM2 4.2 -----

COMMAND ==>

Row 1 of 12
Scroll ==> DATA

CMD	VSAM (options : S, D)	BUF old	new
	Userid.ASM2.ASM2IPC	12288	618501
	Userid.ASM2.ASM2JNL	8192	614402
	Userid.ASM2AGF.ASM2JNL	14402	614402
	Userid.ASM240.ASM2IPC	18499	618498
	Userid.ASM240.ASM2JNL	14402	614402
	Userid.ASM241.ASM2IPC	12288	618499
	Userid.CACT.PROFILE	8704	208899
	Userid.TEST.NO.DATA	0	0
	CHRLU02.PROFILE.DATASET	20	2000
	LUC.TEST	20	999
	LUC.TEST.NODATA	0	5000
	TOTO	10	1000

***** Bottom of data *****

The list of VSAM definitions allows you to list, delete or add any VSAM data set in the table. By default, the above panel displays a list of all defined VSAM files.

The BUF old field is the original buffer space of your VSAM. The new field is the new calculated value that gives the optimum restore performance.

Select a VSAM file and press Enter to display the following panel.

```
----- COMPUTER ASSOCIATES - ASM2 4.2 -----
COMMAND ==>
M400 ** VSAM Userid.ASM2.ASM2IPC exists, switch to update mode **
                                     User = Userid
VSAM   ==> Userid.ASM2.ASM2IPC          Time = 07:52
                                     Date = 24/08/96
                                     Date = 96237

Delete-Define can be found in:
==> Userid.ASM2.PARMLIB
Member:
==> IPCDELD
==> YES (Yes,No) (Edit Delete-Define)

Calculate Bufferspace: (file must be online if set to YES)
==> YES (Yes,No)

Manual Update of Bufferspace:
==> 12288      (original bufferspce)
==> 618501    (bufferspace to be used during restore)

Press Enter to continue  PF3 to Quit
```

This panel indicates the PDS and member name where the Delete/Define statements for the defined VSAM are located.

If the PDS exists, pressing Enter displays the next panel.

```

File Edit Confirm Menu Utilities Compilers Test Help
-----
EDIT      Userid.ASM2.PARMLIB(IPCDELD) - 01.12      Columns 00001 00072
Command ==>                                         Scroll ==> CSR
***** ***** Top of Data *****
==MSG>
==MSG> M132 ** VERIFY IF THIS IS THE CORRECT DELETE - DEFINE **
==MSG>
000001 DELETE  Userid.ASM2.ASM2IPC PURGE CLUSTER
000002 DELETE  Userid.ASM2.ASM2IPC NOSCRATCH
000003 SET MAXCC=0
000004 DEFINE  CLUSTER (
000005          NAME(Userid.ASM2.ASM2IPC)              -
000006          UNIQUE SPEED FREESPACE(10 10)          -
000007          CISZ(4096)                             -
000008          RECORDSIZE(512 4089) KEYS(80 8)        -
000009          SHAREOPTIONS(3 3)                     -
000010          )
000011 DATA (
000012          NAME(Userid.ASM2.ASM2IPC.DATA)           -
000013          CYLINDERS(80 10)                         -
000014          VOLUME(UK0001 UK0006 UK0008)           -
000015          )
000016 INDEX (

```

Pressing PF3 displays the next panel and issues an online LISTCAT to obtain needed information to calculate the optimal buffer size. The new buffer space and the original buffer space are kept in the VSAM table.

```

----- COMPUTER ASSOCIATES - ASM2 4.2 -----
COMMAND ==>
M404 ** Table updated successfull **

TYPE   ==> L      ( A : add, D : delete, L : list)   User = Userid
                                           Time = 07:52
                                           Date = 24/08/96
                                           Date = 96237

VSAM    ==> Userid.ASM2.ASM2IPC                    (vsam or generic *)

Default PDS with Delete-Define members:
==> Userid.BRU.CNTL

Press Enter to continue, PF3 to save, PF1 for help

```

Pressing PF3 one more time displays the following panel.

----- COMPUTER ASSOCIATES - ASM2 4.2 -----
COMMAND ==>

Move Vsam Definitions Back To An ISPTLIB

Table moved from library:
==> CAI.CAIISPT

Table updated in:
==> Userid.ISPF.ISPPROF

VSAM table will be moved to (change if necessary):
==> CAI.ISPTLIB

Press Enter to continue PF3 to bypass COPY

The updated table is moved back to the library from where it came, or to another one if you overwrite the target library.

6.7 Example 7 - Restoring a Specific VSAM Data Set

To restore a specific VSAM data set, select option 2 from the ASM2 Restore Selection menu to display the following panel.

```

LIAAP037 ----- CA-ASM2 EXTENDED RESTORE SELECTION -----
COMMAND ==>

      TYPE    ==> B      ( A : archive, B : backup, L : both)      User = Userid
                                                                Time = 15:20
                                                                Date = 11/16/96
                                                                Date = 96320

      DSNmask ==> Userid.PROF--      VERSION ==> 0000 ==> EQ
      ==>                               SORT    ==> 6      (? for opt)
      ==>

      or

      Applic. ==>                               ( ? for a list of groups)

      Press Enter to continue, PF3 for Menu or PF1 for help

```

Enter the mask in the DSNmask field and press Enter to display the following panel.

```

LIAAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- ROW 1 FROM 7
COMMAND ==>                               Scroll ==> DATA
M011 - BACKUP - Catalog -                (PF1 for help)
  CMD   DATASETNAME                      R VERS IPCDATE  TIME  T
-----
      Userid.PROFILE.DATASET              R 0000 13-07-96 11:54 B
***** END OF ASM2 REQUEST *****

```

Select your specific data set from the list and press Enter.

```

L1AAP008 ----- CA-ASM2 EXTENDED RESTORE CRITERIA -----
COMMAND ==>
M037                ** You selected BATCH restore **

Enter your restore criteria:

NEWNAME  ==> Userid.PROFILE.DATASET
NEWQUAL  ==>
ORIGVOL   ==> N      (Y,N)          QUALNb ==> 1      (# of qual to repl)
                                         NOASSOC ==> N      (Y,N)
                                         CATALOG ==> D      (Default,Y,N,U)
NEWVOL    ==>        (? for vollist) HOMEVOL ==> CAI800
FORCE     ==> Y      (Y: override existing file, N: don't override)

ORIGINAL VOLSER CAI800 IS NOT THE SAME AS CURRENT VOLSER TS035A

File information:                                VERSION ==> 0000
                                                BKDATE  ==> 03-21-94
                                                BKTIME  ==> 11:54
                                                DSORG   ==> VS
                                                CHANGED ==> NO

Press Enter to continue, PF3 to cancel request, CAN to go to begin

```

The VSAM table check is activated only if you restore the VSAM data set under its original name. If you restore it under a new name, you do not have access to the Delete/Define statements for this new file.

If you restore with a new name, you receive a warning panel to remind you of this.

Press Enter to confirm your restore intention.

```

L1AAP003 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- ROW 1 FROM 7
COMMAND ==>                                           Scroll ==> DATA
M001 Select other files or PF3 to generate JCL ** 1 files processed
CMD    DATASETNAME                                R VERS IPCDATE TIME T
-----
      *R* Userid.PROFILE.DATASET                      R 0000 13-07-96 11:54 B
***** END OF ASM2 REQUEST *****

```

Pressing PF3 displays all selected files.


```

L1AAP026 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- ROW 1 TO 1 OF 1
COMMAND ==>                                         Scroll ==> DATA
M056 ** Display of selected files, JCL generation when pressing Enter **
  DATASETNAME                                VOLSER  FORCE  TYPE  BACKUP TIME
  TAPE    NEW DSNAME                        NEWVOL  CMD   DELDEF NEW QUAL
-----
  Userid.PROFILE.DATASET                    CAI800   Y    BKUP   13-07-96
  *DISK*                                     RESTR   Y
***** END OF ASM2 REQUEST *****

```

The above panel displays files that are selected for restore. Note that in the example Y in the DELDEF field indicates a Delete/Define.

Pressing Enter displays the JCL. In the JCL example shown next, the JCL is shown as a multiple JCL edit. Whether there are one or two parts displayed depends on your profile update MULTIPLE JCL EDIT.

The first part of the JCL displayed in the example that follows is the Delete/Define, followed by the alteration of buffer space to the calculated value that is optimal for a performance restore.

The second part of the JCL displayed is a normal CA-ASM2 restore, followed by a change of the buffer space back to the original value saved when you defined the VSAM file in the special VSAM table.

6.7 Example 7 - Restoring a Specific VSAM Data Set

```
ISREDDE - Userid.SPFTMP2.CNTL ----- COLUMNS 001 072
COMMAND ==>                                SCROLL ==> PAGE
***** ***** TOP OF DATA *****
==MSG>
==MSG> M068 ** THIS JOB MUST RUN BEFORE THE RESTORE, PLEASE SUBMIT **
==MSG>
==MSG>
==MSG>
==MSG>
==MSG>          ** THE REAL RESTORE JOB WILL FOLLOW AFTER PRESSING PF3 **
==MSG>
==MSG>
000001 //Userid0 JOB 90600000L.Username...,
000002 //      TYPRUN=HOLD,
000003 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000004 //
000005 //JOBLIB DD DSN=Userid.ASM2.CAILIB,
000006 //      DISP=SHR
000007 //-----*
000008 //*
000009 //*      ASM2 PANELS : RESTORE PROCESSING
000010 //*                      : BY Userid AT 96/06/29 (96.180) 06:20
000011 //*
000012 //*-----*
000013 //*-----*
000014 //*
000015 //*                      : DELETE DEFINE FOR VSAM TABLE ENTRIES
000016 //*
000017 //*-----*
000018 //DELFILE EXEC PGM=IDCAMS
000019 //X$JIXRN DD DUMMY
000020 //SYSPRINT DD SYSOUT=*
000021 //SYSIN DD DISP=SHR,DSN=Userid.BRU.CNTL(DELDEF) 1
000022 //      DD *
000023 ALTER Userid.PROFILE.DATASET.DATA 2 -
000024 BUFFERSPACE(208899)
000025 /*
000026 //* -----*
000027 //* -- SEND MESSAGE THAT ALL IS OK -- *
000028 //* -----*
000029 //SEND0 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(0,NE)
000030 //SYSTSPRT DD SYSOUT=*
000031 //SYSTSIN DD *
000032 SEND *** ASM2 PROCESSING SUCCESSFUL ***,USER(Userid),LOGON
000033 /*
000034 //* -----*
000035 //* -- SEND MESSAGE THAT THERE WAS A PROBLEM -- *
000036 //* -----*
000037 //SEND1 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(0,EQ,SEND0)
000038 //SYSTSPRT DD SYSOUT=*
000039 //SYSTSIN DD *
000040 SEND *** PROBLEMS DURING ASM2 PROCESSING ***,USER(Userid),LOGON
000041 /*
000042 //* -----*
000043 //* -- SEND MESSAGE THAT THERE WAS AN ABEND -- *
000044 //* -----*
000045 //SEND2 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(ONLY)
000046 //SYSTSPRT DD SYSOUT=*
000047 //SYSTSIN DD *
000048 SEND *** ABEND DURING ASM2 PROCESSING ***,USER(Userid),LOGON
000049 /*
000050 //
***** ***** BOTTOM OF DATA *****
```

This JCL does two things:

1. Execute the Delete/Define.
2. Alter this newly created VSAM data set and the bufferspace to the calculated optimal bufferspace for restore performance.

```

ISREDDE - Userid.SPFTMP2.CNTL ----- COLUMNS 001 072
COMMAND ==>                                SCROLL ==> PAGE
***** ***** TOP OF DATA *****
==MSG>
==MSG> M060 ** $DEFRAG AND/OR RESTORE JCL(S), 1 JOB(S) GENERATED **
==MSG>
000001 //Userid1 JOB 90600000L.Username...,
000002 //      TYPRUN=HOLD,
000003 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000004 //*
000005 //JOBLIB   DD DSN=Userid.ASM2.CAILIB,
000006 //              DISP=SHR
000007 //*-----*
000008 //*
000009 //*      ASM2 PANELS : RESTORE PROCESSING
000010 //*      : BY Userid AT 96/06/29 (96.180) 06:20
000011 //*
000012 //*-----*
000013 //RS00      EXEC ASM2CMDU
000014 //RXQUEUE DD DUMMY
000015 //ARCHBKLG DD DUMMY
000016 //AMSOUT  DD SYSOUT=*
000017 //$OPTIONS DD DUMMY
000018 //SYSIN    DD *
000019 * -----
000020 * 00006 TRACKS WILL BE RESTORED FROM VOLSER *DISK*, DSORG = VS
000021 * -----
000022 $RB -
000023 UDATE(07/13/96) UTIME(11:54) -
000024 FORCE -
000025 DSNAM(Userid.PROFILE.DATASET(-0000)) 1
000026 /*
000027 //* ----- *
000028 //* -- ALTER BUFFERSPACE BACK TO THE ORIGINAL VALUE -- *
000029 //* ----- *
000030 //ALTER      EXEC PGM=IDCAMS
000031 //X$JIXRN DD DUMMY
000032 //SYSPRINT DD SYSOUT=*
000033 //SYSIN DD *
000034 ALTER Userid.PROFILE.DATASET.DATA - 2
000035 BUFFERSPACE(8899)
000036 /*
000037 //* ----- *
000038 //* -- SEND MESSAGE THAT ALL IS OK -- *
000039 //* ----- *
000040 //SEND0      EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(0,NE)
000041 //SYSTSPRT DD SYSOUT=*
000042 //SYSTSIN DD *
000043 SEND *** FILE(S) ARE RESTORED ***,USER(Userid),LOGON
000044 /*
000045 //* ----- *

```

6.7 Example 7 - Restoring a Specific VSAM Data Set

```
000046 /* -- SEND MESSAGE THAT THERE WAS A PROBLEM -- *
000047 /* ----- *
000048 //SEND1 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(0,EQ,SEND0)
000049 //SYSTSPRT DD SYSOUT=*
000050 //SYSTSIN DD *
000051 SEND *** PROBLEMS DURING RESTORE ***,USER(Userid),LOGON
000052 /*
000053 /* ----- *
000054 /* -- SEND MESSAGE THAT THERE WAS AN ABEND -- *
000055 /* ----- *
000056 //SEND2 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(ONLY)
000057 //SYSTSPRT DD SYSOUT=*
000058 //SYSTSIN DD *
000059 SEND *** ABEND DURING RESTORE ***,USER(Userid),LOGON
000060 /*
000061 //
***** ***** BOTTOM OF DATA *****
```

This JCL also does two things:

1. Due to the previous job, the normal restore uses the optimal restore bufferspace.
2. After the restore, the bufferspace is returned to the original value.

6.8 Example 8 - Restoring from a Member Backup

If your site takes member backups from critical data sets, you can use ISPF to restore individual members, without the need to restore the entire PDS to another name, and to copy manually the member(s) that you need.

```

----- COMPUTER ASSOCIATES - ASM2 4.2 -----
COMMAND ==>

TYPE    ==> B      ( A : archive, B : backup, L : both)   User = Userid
                                                    Time = 07:25
                                                    Date = 24/08/96
                                                    Date = 96237

DSNmask ==> Userid.DEVL.L1AA      VERSION ==> 0      ==> EQ
==>                                SORT    ==> 6      (? for opt)
==>                                Members ==> 0      (Y,N,0)

or

Applic. ==>                                (? for a list of applications)

Press Enter to continue, PF3 for Menu or PF1 for help

```

If enabled by Profile Update, the Members field appears on your selection panel as shown above.

Possible values are:

- Y specifies to include member backups
- N specifies that no member backups are to be included
- O specifies that only member backups are to be selected

Select a value and display the next panel.

```

----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 19
COMMAND ==>                               Scroll ==> DATA
M011 - BACKUP - Catalog -                   (PF1 for help)
CMD   DATASETNAME                           R VERS IPCDATE  TIME  T
TRKS  TAPEVOL    TAPESEQ    DISKVOL        RELDATE  LASTUSED  IPCTYPE  RETPD
-----
00001  *DISK*      Userid.DEVL.L1AA.$BK.$$$$ 0000 15-03-96 12:37 B
      *DISK*      MVW04A                    15-03-96  USER   - 0141
      *DISK*      Userid.DEVL.L1AA.$BK.$WHATNEW 0000 19-03-96 10:06 B
00003  *DISK*      MVW04A                    19-03-96  USER   - 0514
      *DISK*      Userid.DEVL.L1AA.$BK.B043 0000 16-03-96 03:50 B
00001  *DISK*      MVW04A                    16-03-96  USER   - 0517
      *DISK*      Userid.DEVL.L1AA.$BK.L1AAC001 0000 19-03-96 10:06 B
00009  *DISK*      MVW04A                    19-03-96  USER   - 0514
      *DISK*      Userid.DEVL.L1AA.$BK.L1AAC043 0000 19-03-96 10:06 B
00001  *DISK*      MVW04A                    19-03-96  USER   - 0514
      *DISK*      Userid.DEVL.L1AA.$BK.L1AAHB16 0000 19-03-96 10:06 B
00001  *DISK*      MVW04A                    19-03-96  USER   - 0514
      *DISK*      Userid.DEVL.L1AA.$BK.L1AAH002 0000 19-03-96 10:06 B
00001  *DISK*      MVW04A                    19-03-96  USER   - 0514
      *DISK*      Userid.DEVL.L1AA.$BK.L1AAP001 0000 19-03-96 10:06 B
00001  *DISK*      MVW04A                    19-03-96  USER   - 0514
      *DISK*      Userid.DEVL.L1AA.$BK.L1AAP002 0000 19-03-96 10:06 B
00001  *DISK*      MVW04A                    19-03-96  USER   - 0514

```

Note that the selected PDS was Userid.DEVL.L1AA, and that this display shows this PDS name followed by \$BK. and a member name.

After selecting one of these members, a special restore panel is displayed.

```

----- COMPUTER ASSOCIATES - ASM2 4.2 -----
COMMAND ==>
M037          ** You selected BATCH restore **

Enter your restore criteria for member selection:      User = Userid
                                                    Time = 07:25
                                                    Date = 24/08/96
To PDS      ==> Userid.DEVL.L1AA                    Date = 96237
Member      ==> $$$$ (optionally rename member during restore)

Replace     ==> N      (Y,N)

                                                    VERSION ==> 0000
                                                    BKDATE  ==> 15-03-96
                                                    BKTIME  ==> 12:37
                                                    DSORG   ==> PS
                                                    CHANGED ==>

Press Enter to continue, PF3 to cancel request, CAN to go to begin

```

The To PDS field is automatically filled in with the name of the original PDS, but this can be changed to any existing PDS with the same attributes (LRECL, BLKSIZE).

The Member field is also filled in with the original member name, but can be changed to another member name.

If the member you specify exists in the target PDS, you are prompted to confirm the replace.

```

----- COMPUTER ASSOCIATES - ASM2 4.2 -----
COMMAND ==>

List IPC information                                User = Userid
                                                    Time = 07:25
                                                    Date = 24/08/96
                                                    Date = 96237
                                                    ( 0000 )

DSNAME      ==> Userid.DEVL.L1AA.$BK.$$$$

HOMEVOL     ==> MVW04A          DSORG      ==> PS
TAPEVOL     ==> *DISK*         FULL BKUP  ==> N
FILESEQ     ==>                TRACKS     ==> 00001
LAST USED   ==> 15-03-96       DEL DATE    ==>
BACKUPDATE  ==> 15-03-96       DEL BY      ==>
BACKUPTIME  ==> 12:37          RELOADFLAG ==>
RETENTION   ==> -0141          RELOADDATE ==>
UTILITY     ==> $PDMUR         RELOAD BY  ==>
REASON      ==> USER          RELOADDSN   ==>
CATALOGTYPE ==> BKUP          PSEUDOVOL    ==>
COMMENT     ==> $MEM$          SYSID       ==>

                                                    -----
                                                    | FILE IS NOT ONLINE |
                                                    -----

Press Enter to continue

```

When the L line command is used with a member backup, \$MEM\$ is displayed in the COMMENT field. This indicates a member backup, do not modify this field.

Note: Mass commands such as MRES or MUPD, do not select these member backups.

6.9 Example 9 - Full-Volume Restore and Recovery

In this example, a head crash has occurred on volume SJ0004. Since the volume has been damaged, a restore is needed to another pack that has been labeled as UK0001 but is relabeled later to the same as the damaged pack.

After selecting option B on the main menu, you receive the following menu to specify recovery options for volumes.

```
L1AAP091 ----- CA-ASM2 EXTENDED VOLUME MENU -----
COMMAND ==>

Recovery selection ==> 3                                User = Userid
                                                         Time = 12:29
                                                         Date = 27/08/96
                                                         Date = 96240
                                                         Opt = L

1 - Volume Restore
2 - Volume Recovery (Full Restore and Incremental Recovery)
3 - Volume Recovery (Full Restore, Incremental Recovery, Tape Optimization)

4 - Incremental Recovery (from a specific date and time)
5 - Incremental Recovery (from a specific date and time with Tape Optim.)

6 - (Mass) Tape Optimization (is included in option 3 and 5)
   (to process all SYSUT1/2 files from different option 2 and 4 runs)

L - List available Full-Volumes with RSVP in Batch

IPC      ==> Userid.ASM2.ASM2IPC
Journal  ==> Userid.ASM2.ASM2JNL
```

Since the last full backup was done one week ago, a full restore and incremental recovery of 5 work days needs to be performed. Because of the number of tapes involved, tape optimization should be used. Option 3 satisfies all requirements.

Pressing Enter brings up the following panel.


```

LIAAP040 ----- CA-ASM2 EXTENDED VOLUME RECOVER -----
COMMAND ==>

Enter volser for FULL Restore or Incremental Recovery      User = Userid
                                                            Time = 12:29
                                                            Date = 27/08/96
                                                            Date = 96240
                                                            Opt = L
VOLUME ==> SJ0004 (enter ? for Space Map of online volumes) or
                  (enter * for ALL volumes with a Full Backup) or
                  (enter FULL disk name)

IPC      ==> Userid.ASM2.ASM2IPC
Journal ==> Userid.ASM2.ASM2JNL

Press Enter to continue, PF1 for help, PF3 to return

```

Since the volume number is known, SJ0004 is entered.

Pressing Enter brings up the following panel.

```

LIAAP041 ----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 1
Command ==>                                         Scroll ==> DATA

S to select a version for volser SJ0004

CMD  Tape Datasetname                                BACKUP
    Unit   Tape Volumes                                Date      Time
---
s    ASM2.BKUP.DEFRAG.MSTR                            31-01-96  19:30
    3420    ASF081
          ASM2.BKUP.DEFRAG.MSTR                        24-01-96  19:20
    3420    ASF022

***** Bottom of data *****

```

The above panel shows that 2 versions of volume SJ0004 are available. As shown, the first and most recent version has been selected. The Unit name on this panel is only an internal ASM2 field. This is translated to the value specified in your \$OPTIONS module.

Pressing Enter brings up the following panel.

```
L1AAP043 ----- CA-ASM2 EXTENDED RESTORE CRITERIA -----  
COMMAND ==>  
  
Enter Full-Volume Restore Parameters for SJ0004  
Tape DSN      ==> ASM2.BKUP.DEFRAG.MSTR  
Tape UNIT     ==> 3420  
Backup Date   ==> 31-01-96  
Backup Time   ==> 19:30  
Tape Volsers  ==> ASF081  
  
Parameters:  
Compress      ==> N      (Y,N)  NEWVOL      ==> UK0001  (? for volume list)  
Test          ==> N      RENVVDS     ==> N      (Y,N)  
Reindex       ==> N      RENVTOCIX  ==> N      (Y,N)  
  
Relabel your NEWVOL to SJ0004  
              ==> Y      (Y,N)  
  
Press Enter to continue, PF1 for help, PF3 to return
```

Since the original SJ0004 volume is damaged, the volume is varied offline. The backup is restored on a free volume (UK0001). Enter Y in the RELABEL field to relabel the volume.

This generates an extra step after the restore JCL which asks the operator to vary UK0001 offline, so that the next step relabels the volume back to SJ0004.

```

File Edit Confirm Menu Utilities Compilers Test Help
-----
ISREDDE2  SYS96240.T114011.RA000.Userid.R0092767      Columns 00001 00072
Command ==>                                         Scroll ==> CSR
***** ***** Top of Data *****
==MSG>
==MSG> M116 ** FULL VOLUME RESTORE OF SJ0004 **
==MSG>
000001 //UseridA JOB '90600000L.Username...',
000002 //      TYPRUN=HOLD,
000003 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000004 //*
000005 //JOB LIB DD DSN=Userid.DEVL.L1AA.LEV9604.LOAD,
000006 //      DISP=SHR
000007 //PROCS JCLLIB ORDER=Userid.CAI.CAIPROC
000008 //*-----*
000009 //*
000010 //*      ASM2 PANELS : FULL RESTORE
000011 //*      : CONSOLE INTERVENTION REQUIRED IN THIS JOB
000012 //*      : BY Userid AT 96/08/27 (96.240) 12:29
000013 //*
000014 //*-----*
000015 //REST EXEC PGM=$DEFRAG,
000016 // PARM='NOCOMP'
000017 //ISPLIB DD DISP=SHR,DSN=ASM.ASM2L2.R410.CAIISPM
000018 //SYSPRINT DD SYSOUT=*
000019 //DSFPRINT DD SYSOUT=*
000020 //SYSUDUMP DD SYSOUT=*
000021 //DSFIN DD UNIT=SYSDA,SPACE=(TRK,1)
000022 //SYSUT1 DD DSN=ASM2.BKUP.DEFRAG.MSTR,
000023 //      DISP=SHR,
000024 //      UNIT=TAPE,
000025 // VOL=SER=(ASF081)
000026 //SYSUT2 DD UNIT=SYSDA,VOL=SER=UK0001,DISP=SHR
000027 //* -----+
000028 //* ASK OPERATOR TO VARY OFFLINE 0FDC
000029 //* -----+
000030 //ASK EXEC PGM=L1AAX055,
000031 // PARM='Y,N,L1AAX055 - VARY OFFLINE 0FDC AND CONFIRM WITH Y'
000032 //*
000033 //* -----+
000034 //* RELABEL UK0001 TO SJ0004
000035 //* -----+
000036 //RELAB EXEC PGM=ICKDSF,COND=(0,NE,ASK)
000037 //SYSPRINT DD SYSOUT=*
000038 //SYSIN DD *
000039 REFORMAT UNIT(0FDC) VERIFY(UK0001) VALID(SJ0004)
000040 //*
000041 //* -----*
000042 //* -- SEND MESSAGE THAT ALL IS OK -- *
000043 //* -----*
000044 //SEND0 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(0,NE)
000045 //SYSTSPRT DD SYSOUT=*
000046 //SYSTSIN DD *
000047 SEND '*** RESTORE VOL SJ0004 SUCCESSFUL ***',USER(Userid),LOGON
000048 //*
000049 //* -----*
000050 //* -- SEND MESSAGE THAT IT'S OK BUT CONDITION CODE 1-4 -- *
000051 //* -----*
000052 //SEND1 EXEC PGM=IKJEFT01,DYNAMNBR=50,
000053 // COND=((4,LT),(0,EQ,SEND0))
000054 //SYSTSPRT DD SYSOUT=*
000055 //SYSTSIN DD *
000056 SEND '*** JOB ENDED WITH RC BETWEEN 1 AND 4 **',USER(Userid),LOGON

```

The generated JCL must be submitted manually (as all edited JCL). It performs the volume restore to a free volume, and relabels the volume back to SJ0004.

Once this job has ended and the volume varied online again, the following panel is displayed to prepare the incremental recovery.

```
L1AAP093 ----- CA-ASM2 EXTENDED RECOVERY CRITERIA -----
COMMAND ==>

Incremental Recovery for SJ0004                                User = Userid
(from 93031 19:30)                                           Time = 12:30
                                                                Date = 27/08/96
Examine only Incremental Backups:                             Date = 96240
    ==> NO (Yes,No)                                           Opt = L

Output dsname mask:
    ==> Userid.ASM2.RECOVERY.SYSUT1      * (SYSUT1)
    ==> Userid.ASM2.RECOVERY.SYSUT2      (SYSUT2)
        (will be appended with VSJ0004 )

Optimized output dsname mask:
    ==> Userid.ASM2.RECOVERY.TO.SUBMIT      *
Unit for new files:
    ==> SYSDA

The * indicated files MUST be submitted afterwards

Press Enter to continue, PF1 for help, PF3 to return
```

The Examine only Incremental Backups field is specified as NO so that the CA-ASM2 catalog is searched to find the most recent version of each file to recover, and include not only incremental backups, but also explicit (or user) backups in the search.

In the Output dsname mask, the defaults are used.

The Incremental Recovery writes into 2 sequential files. Recovery commands for catalogs on this volume are written to SYSUT1 and all normal restore commands to SUSUT2.

Pressing Enter displays the JCL.

The following job can be submitted as provided. It only prepares for the incremental recovery to follow. It asks for the latest incremental backup tape of SJ0004. When mounted, the latest version of the VTOC is compared with the VTOC restored with the full restore.

```

File Edit Confirm Menu Utilities Compilers Test Help
-----
ISREDDE2  SYS96240.T114011.RA000.Userid.R0092767      Columns 00001 00072
Command ==>                                         Scroll ==> CSR
***** ***** Top of Data *****
==MSG>
==MSG> M139 ** VOLUME RECOVERY OF VOLUME SJ0004 **
==MSG>
000001 //UseridB JOB '90600000L.Username...',
000002 //      TYPRUN=HOLD,
000003 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000004 //*
000005 //JOB LIB DD DSN=Userid.DEVL.L1AA.LEV9604.LOAD,
000006 //      DISP=SHR
000007 //PROCS JCLLIB ORDER=Userid.CAI.CAIPROC
000008 //*-----*
000009 //*
000010 //*      ASM2 PANELS : INCREMENTAL RECOVERY
000011 //*      : BY Userid AT 96/08/27 (96.240) 12:30
000012 //*
000013 //*-----*
000014 //**-----*
000015 //** DELETE WORK FILES (IN CASE THAT...)
000016 //**-----*
000017 //ST010 EXEC PGM=IDCAMS
000018 //SYSPRINT DD SYSOUT=*
000019 //SYSIN DD *
000020 DELETE Userid.ASM2.RECOVERY.SYSUT2.VSJ0004
000021 DELETE Userid.ASM2.RECOVERY.SYSUT1.VSJ0004
000022 DELETE Userid.ASM2.RECOVERY.TO.SUBMIT
000023 SET MAXCC = 0
000024 /*
000025 //**-----*
000026 //** ALLOCATE THE WORK FILE FOR ALL RESTORE JOBS
000027 //**-----*
000028 //ST020 EXEC PGM=IEFBR14
000029 //ALL1 DD DISP=(,CATLG),
000030 //      DSN=Userid.ASM2.RECOVERY.TO.SUBMIT,
000031 //      UNIT=SYSDA,SPACE=(CYL,(1,1)),
000032 //      DCB=(RECFM=FB,LRECL=80,BLKSIZE=23440,DSORG=PS)
000033 //*

```

```

000034 /**-----*
000035 /** THE REAL INCREMENTAL RECOVERY GENERATION *
000036 /**-----*
000037 //ST030 EXEC ASM2INCR,PARM=REAL,COND=(0,NE)
000038 //$OPTIONL DD DUMMY
000039 //SYSUT2 DD DISP=(,CATLG),
000040 // DSN=Userid.ASM2.RECOVERY.SYSUT2.VSJ0004,
000041 // UNIT=SYSDA,SPACE=(CYL,(1,1))
000042 //SYSUT1 DD DISP=(,CATLG),
000043 // DSN=Userid.ASM2.RECOVERY.SYSUT1.VSJ0004,
000044 // UNIT=SYSDA,SPACE=(TRK,(5,1))
000045 //SYSIN DD *
000046 $COMMENT ON
000047 $INCRVR,96031,19:30,SJ0004,SJ0004
000048 /**-----*
000049 /** BATCH EXEC OF L1AAC023 (1 JOB PER TAPE) TAPE OPTIMIZATION *
000050 /**-----*
000051 //S050 EXEC ASM2REXX
000052 //INPUT DD DISP=SHR,
000053 // DSN=Userid.ASM2.RECOVERY.SYSUT2.VSJ0004
000054 //ISPFIL DD DISP=MOD,
000055 // DSN=Userid.ASM2.RECOVERY.TO.SUBMIT
000056 //SYSTSIN DD *
000057 PROFILE PREFIX(Userid)
000058 ISPSTART CMD(%L1AAC023 '90600000L.Username...' -
000059 Userid.DEVL.L1AA.LEV9604.LOAD Userid.CAI.CAIPROC)
000060 /*
000061 /** ----- *
000062 /** -- SEND MESSAGE THAT ALL IS OK -- *
000063 /** ----- *
000064 //SEND0 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(0,NE)
000065 //SYSTSPRT DD SYSOUT=*
000066 //SYSTSIN DD *
000067 SEND '*** INCR GENER SJ0004 SUCCESSFUL ***',USER(Userid),LOGON
000068 /*
000069 /** ----- *
000070 /** -- SEND MESSAGE THAT IT'S OK BUT CONDITION CODE 1-4 -- *
000071 /** ----- *
000072 //SEND1 EXEC PGM=IKJEFT01,DYNAMNBR=50,
000073 // COND=((4,LT),(0,EQ,SEND0))
000074 //SYSTSPRT DD SYSOUT=*
000075 //SYSTSIN DD *
000076 SEND '*** JOB ENDED WITH RC BETWEEN 1 AND 4 **',USER(Userid),LOGON

```

Once you quit the Edit screen, you are prompted to wait until the recovery preparation job has ended.

```
L1AAPXXX ----- CA-ASM2 EXTENDED ERROR PANEL -----  
COMMAND ==>  
  
User = Userid  
Time = 12:30  
Date = 27/08/96  
Date = 96240  
  
PLEASE...CONTINUE ONLY AFTER THE  
INCREMENTAL CREATION IS FINISHED  
(USE PF3 WHEN YOU WANT TO USE OPTION 6 LATER)  
  
Press Enter to continue, or PF3 to bypass
```

You are then put in edit mode again for the JCL to do the actual recovery process.

6.9 Example 9 - Full-Volume Restore and Recovery

```
File Edit Confirm Menu Utilities Compilers Test Help
-----
ISREDDE2  SYS96240.T114011.RA000.Userid.R0092767      Columns 00001 00072
Command ==>                                         Scroll ==> CSR
***** ***** Top of Data *****
==MSG>
==MSG> M182 ** INCREMENTAL RECOVERY OF ICF CATALOGS (SYSUT1 FILE(S)) **
==MSG>
000001 //UseridC JOB '90600000L.Username...',
000002 //      TYPRUN=HOLD,
000003 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000004 //*
000005 //JOB LIB DD DSN=Userid.DEVL.L1AA.LEV9604.LOAD,
000006 //      DISP=SHR
000007 //PROCS JCLLIB ORDER=Userid.CAI.CAIPROC
000008 //*-----*
000009 //*
000010 //*      ASM2 PANELS : $RB RESTORE OF ALL ICF CATALOGS (SYSUT1)
000011 //*      : BY Userid AT 96/08/27 (96.240) 12:30
000012 //*
000013 //*-----*
000014 //RS00 EXEC ASM2CMDU
000015 //RXQUEUE DD DUMMY
000016 //$OPTIONL DD DUMMY
000017 //SYSIN DD DISP=SHR,
000018 //      DSN=Userid.ASM2.RECOVERY.SYSUT1.VSJ0004
000019 /*
000020 //* ----- *
000021 //* -- SEND MESSAGE THAT ALL IS OK -- *
000022 //* ----- *
000023 //SEND0 EXEC PGM=IKJEFT01,DYNAMNBR=50,COND=(0,NE)
000024 //SYSTSPRT DD SYSOUT=*
000025 //SYSTSIN DD *
000026 SEND '*** SYSUT1 RESTORE SUCCESSFUL ***',USER(Userid),LOGON
000027 /*
000028 //* ----- *
000029 //* -- SEND MESSAGE THAT IT'S OK BUT CONDITION CODE 1-4 -- *
000030 //* ----- *
000031 //SEND1 EXEC PGM=IKJEFT01,DYNAMNBR=50,
000032 //      COND=((4,LT),(0,EQ,SEND0))
000033 //SYSTSPRT DD SYSOUT=*
000034 //SYSTSIN DD *
000035 SEND '*** JOB ENDED WITH RC BETWEEN 1 AND 4 ***',USER(Userid),LOGON
000036 /*
```

The first step for a restore is to execute the commands written in the SYSUT1 file. If the SJ0004 volume contained catalogs, the catalogs need to be recovered first.


```

File Edit Confirm Menu Utilities Compilers Test Help
-----
ISREDDE2  Userid.ASM2.RECOVERY.TO.SUBMIT          Columns 00001 00072
Command ==>                                         Scroll ==> CSR
***** ***** Top of Data *****
==MSG>
==MSG> M183 ** OPTIMIZED INCREMENTAL RECOVERY JOB(S) (SYSUT2 FILE(S)) **
==MSG>
000001 //FT126494 JOB '90600000L.Username...',
000002 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000003 //JOBLIB DD DSN=Userid.DEVL.L1AA.LEV9604.LOAD,
000004 //      DISP=SHR
000005 //PROCS JCLLIB ORDER=Userid.CAI.CAIPROC
000006 //*-----*
000007 //*
000008 //*      ASM2 PANELS : INCREMENTAL RECOVERY VOLSER T126494
000009 //*      : BY Userid AT 96/08/26 (96.239) 11:23
000010 //*
000011 //*-----*
000012 //ASM2CMDU EXEC ASM2CMDU
000013 // $OPTION DD DUMMY
000014 //SYSIN DD *
000015 $RB DA('CAI.CA21.CMT') -
000017 NEWVOL(SJ0004) -
000018 FORCE CAT(NO)
000019 //FT126496 JOB '90600000L.Username...',
000020 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000021 //JOBLIB DD DSN=Userid.DEVL.L1AA.LEV9604.LOAD,
000022 //      DISP=SHR
000023 //PROCS JCLLIB ORDER=Userid.CAI.CAIPROC
000024 //*-----*
000025 //*
000026 //*      ASM2 PANELS : INCREMENTAL RECOVERY VOLSER T126496
000027 //*      : BY Userid AT 96/08/26 (96.239) 11:23
000028 //*
000029 //*-----*
000030 //ASM2CMDU EXEC ASM2CMDU
000031 // $OPTION DD DUMMY
000032 //SYSIN DD *
000033 $RB DA('CAI.CA23.CMT') -
000034 NEWVOL(SJ0004) -
000035 FORCE CAT(NO)
000036 //FT226496 JOB '90600000L.Username...',
000037 //      MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000038 //JOBLIB DD DSN=Userid.DEVL.L1AA.LEV9604.LOAD,
000039 //      DISP=SHR
000040 //PROCS JCLLIB ORDER=Userid.CAI.CAIPROC
000041 //*-----*
000042 //*
000043 //*      ASM2 PANELS : INCREMENTAL RECOVERY VOLSER T226496
000044 //*      : BY Userid AT 96/08/26 (96.239) 11:23
000045 //*
000046 //*-----*

```

```

000047 //ASM2CMDU EXEC ASM2CMDU
000048 //$OPTION DD DUMMY
000049 //SYSIN DD *
000050 $RB DA('CAI.CA24.CMT') -
000034 NEWVOL(SJ0004) -
000052 FORCE CAT(NO)
000053 //FT126496 JOB '90600000L.Username...',
000054 // MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000055 //JOB LIB DD DSN=Userid.DEVL.L1AA.LEV9604.LOAD,
000056 // DISP=SHR
000057 //PROCS JCLLIB ORDER=Userid.CAI.CAIPROC
000058 //*-----*
000059 //*
000060 //* ASM2 PANELS : INCREMENTAL RECOVERY VOLSER T126496
000061 //* : BY Userid AT 96/08/26 (96.239) 11:23
000062 //*
000063 //*-----*
000064 //ASM2CMDU EXEC ASM2CMDU
000065 //$OPTION DD DUMMY
000066 //SYSIN DD *
000067 $RB DA('CAI.CA25.CMT') -
000034 NEWVOL(SJ0004) -
000069 FORCE CAT(NO)
000070 $RB DA('CAI.CA26.CMT') -
000034 NEWVOL(SJ0004) -
000073 FORCE CAT(NO)
000074 //FT126498 JOB '90600000L.Username...',
000075 // MSGCLASS=X,REGION=4M,CLASS=A,MSGLEVEL=(0,0)
000076 //JOB LIB DD DSN=Userid.DEVL.L1AA.LEV9604.LOAD,

```

Note that the jobname is FTxxxxxx where xxxxxx specifies the volser needed for each job. In the example JCL there are several jobs, each having a specific tape associated with it. Tape optimization follows the \$INCRV program and uses the SYSUT2 file as input. All \$RB commands are resorted by tape volser, and in a new sequential file the different jobs are generated to restore all files, except that there is now one job generated for each tape to be used.

When all jobs are finished, the volume recovery has completed.

Note: If you have CA-Crews available, a verify run is recommended to check the catalog status of all files.

Appendix A. CA-7 Interface

You have the option of moving all of your restore requests to CA-7. This is done if you have specified this in your profile (described in Chapter 3). You can specify this only if you have indicated that you have CA-7 available on your system (in L1AAXMOD).

If you have selected this option, whenever JCL is generated using the ISPF interface, the CA-7 interface is invoked automatically and the following panel is displayed.

If you do not have this option selected in your profile you can still invoke this panel by typing SUBCA7 on the command line when you are editing the JCL. The only prerequisite for the SUBCA7 command is that in the customization program the parameters for CA-7 are filled in with the correct data set names.

```
L1AAP048 ----- CA-ASM2 EXTENDED MOVE JCL TO CA7 -----
COMMAND ===>

Move ASM2 job to CA-7                                     User = Userid
                                                         Time = 15:20
                                                         Date = 11/16/96
                                                         Date = 96320

Jobname to be used in CA-7          ===>  RESTORE1

Optional requirements:

Time this job may start             ===>  1800      (hhmm)
Date this job may run               ===>              (yyddd or  nn)
Job that must end before this job   ===>  ABEND01   (jobname)

Delete JCL after good execution     ===>              (yes,no)

Press Enter to continue, PF3 to cancel request
```

Field Descriptions

Jobname to be used	Specifies the jobname the JCL is to run under (by default this is your userid + 1 character). The jobname is checked to see if it is in the target CA-7 library. If yes, a warning message is displayed.
Time this job may start	Specifies a submit time requirement for this restore job. If specified, the job is not submitted until the time you specify. If an earlier time is specified than the current time, CA-7 is consider this as a requirement for the next day.
Date this job may run	Specifies a submit date requirement. If specified, this restore job is not submitted before that date. The format can be YYDDD, or +x, where x is a number of days to be added to the current date.
Job that must end	Specifies a jobname that must end normally before your restore job can be started.

Pressing Enter moves the JCL to the CA-7 JCL library under the name that you specified in the Jobname field. Upon completion of the JCL, your parameters (requirements) are taken, and a DEMAND,SET=NDB command is generated. This command is given to CA-7 using a BTI (Batch Terminal Interface) that is executed online.

The CA-7 interface responds by returning a panel similar to the following panel to inform you that your request was accepted by CA-7.

```
ISRBROBF Userid.CA7BTI.DATA ----- LINE 00000000 COL 001 080
COMMAND ==>                                SCROLL ==> PAGE
***** TOP OF DATA *****
BSTR-00 *** INPUT TO BATCH TERMINAL ***

/LOGON ***** * GENERATED LOGON *
DEMAND,JOB=RESTORE1,JCLID=254,SET=NDB,TIME=1800,DEPJOB=ABEND01
/LOGOFF * GENERATED LOGOFF *
BSTR-00 *** END OF INPUT ***
96337 111247 /LOGON *****

CA-7.022 - V3.0 (9104) LOGON REJECTED BY CA-7 AT BTERM1
CAL2103I - USER NOT AUTHORIZED FOR CA-7 COMMANDS

96337 111248 DEMAND,JOB=RESTORE1,JCLID=254,SET=NDB,TIME=1800,DEPJOB=ABEND

CA-7.022 - V3.0 (9104) LOGON REJECTED BY CA-7 AT BTERM1
CAL2103I - USER NOT AUTHORIZED FOR CA-7 COMMANDS

96337 111249 /LOGOFF

CA-7.024 - V3.0 (9104) OPERATOR AT TERMINAL (BTERM1 ) LOGGED OFF AT 11:12:49 ON
***** BOTTOM OF DATA *****
```

Note that a logon is not generated because CA-7 generates a logon with your TSO userid. If CA-7 is not active when the JCL is submitted, this information is displayed and the generated JCL returned so the job can be submitted manually.

Appendix B. ISPF Table Variables

This appendix lists the various fields that you can use in conjunction with the MGEN command to generate your own customized commands.

B.1 Key Fields

Field	Description	Length
LIDSNT	Full data set name	CL44
LIUDAT	Unload date	CL8
LIUTIT	Unload time	CL5
TYXF	Type request	CL1

B.2 Normal Fields

Field	Description	Length
L1DSN	Data set name	CL44
CMMV	Updated Comment	CL30
EXXV	Updated EXPDT	CL6
YTYPE	Request Type (B, A or L)	CL1
RORV	Is origvol used	CL3
RASS	Noassoc	CL1
RVSN	Newvol	CL6
L1VOL	Disk Volume	CL6
L1SEQ	Tape file sequence	CL3
L1UTIME	Unload Time	CL5
L1UDATE	Unload Date	CL8
L1TYPE	Type in IPC (ARCH BKUP)	CL4
L12VOL1	Volser for \$DEFrag	CL6
L12VOL2	Volser for \$DEFrag	CL6
L12VOL3	Volser for \$DEFrag	CL6
L12VOL4	Volser for \$DEFrag	CL6
L12VOL5	Volser for \$DEFrag	CL6
L12VOL6	Volser for \$DEFrag	CL6
L12TDSN	Tape Data set name for \$DEFrag	CL44
L12TPUN	Unit Type for \$DEFrag	CL8
YOPT	\$OPTION. used	CL1
RF	Reload with Force	CL1
RQAL	Newqual	CL20
RQNB	Newqual replaces # of quals	CL1
SWUND	Undelete a file	CL3
SWDAT	File expired	CL3
VSS	VSAM from a \$DEFrag	CL3
L1LEVEL	Version number	CL4
L1TAPE	Tape Volser	CL6

Field	Description	Length
TYX	Explication for TYXF	CL5
FTYX	Type of processing (C, D, Y, R or G)	CL1
L1TPUN	Unit name on tape	CL1
L1FDEL	Restore NEWVOL with FORCE, delete it	CL1

The following dates are in European or American format, depending on the L1EURO parameter in the customization program L1AAXMOD.

- L1UDAT
- L1UPDATE

Appendix C. Extended Functions Customization

The Extended functions can be customized using sample member L1AAXMOD in the CAI.PPOPTION data set. The L1AAXMOD source must be assembled and link edited using the sample member LINKXMOD in the CAI.SAMPJCL data set.

The following pages describe the variables found in the L1AAXMOD member and their associated settings.

C.1 JOBCARD Parameters

X2MSG	Msgclass parameter used in the generation of the jobcard for the different batch jobs.
X2CLASS	JES execution class for SYST authority.
X2CLASO	JES execution class for OPER authority.
X2CLASP	JES execution class for all other authorities.
	Note: The following accounting information fields can be filled in with a fixed value; or you can enter : ZACCTNUM which uses the logon variable &ZACCTNUM.
X2ACCS	Accounting information for SYST authority.
X2ACCO	Accounting information for OPER authority.
X2ACCP	Accounting information for all other authorities.
X2NJOB	Number of jobs that are reserved for restore jobs using tapes (or cartridges). When restoring a large number of files, they can reside on different tapes. Setting this value to greater than 1 permits different jobs, putting all files from the same tape volume together in the same restore job.
X2NJOB	Maximum number of restore jobs that can be generated with one request. If X2NJOB is greater than X2NJOB, the difference is the number of jobs reserved for restores from disk. If X2NJOB and X2NJOB are equal, a separate job is not reserved for disk restores. X2NJOB cannot be less than X2NJOB.
X2DSND	Default setting that presets the dsname in the selection panels. A good starter is &&SYSUID.- This is translated to the user's userid followed by '.-' You can also use &&ZPREFIX.-
X2QN	Optional queue name to be used when restore requests are queued to CA-ASM2. \$RXQUMON can be adapted to use only this queue. If not used this field can be blank (' ').
X2LL	Optional LOADLIB that contains all CA-ASM2 modules. This is needed if the CA-ASM2 LOADLIB is not in your linklist. If filled in, a STEPLIB in all JCL is generated. If not used this field can be blank (' '). You can specify '&&L1PREF..' to use the CA-ASM2 prefix defined in your \$OPTIONS.
X2DELDEF	This field is required when the VSAM restore optimization function is used (optimize bufferspace). It points to the PDS containing the Delete/Define commands for the defined VSAM in the table (option A, suboption B). If not used this field can be blank (' '). You can specify '&&L1PREF..' to use the CA-ASM2 prefix defined in your \$OPTIONS.

C.2 IPC Backup GDGs

X2IREP	GDG data set name for backup of the IPC using REPRO. You can specify '&&L1PREF.. ' to use the CA-ASM2 prefix defined in your \$OPTIONS.
X2IEXP	GDG data set name for backup of the IPC using EXPORT. You can specify '&&L1PREF.. ' to use the CA-ASM2 prefix defined in your \$OPTIONS.
X2IBK	GDG data set name for backup of the IPC using the standard CA-ASM2 backup utility. You can specify '&&L1PREF.. ' to use the CA-ASM2 prefix defined in your \$OPTIONS.
X2IJN	GDG data set name for backup of the JNL using the standard CA-ASM2 backup utility. You can specify '&&L1PREF.. ' to use the CA-ASM2 prefix defined in your \$OPTIONS.
X2IREPL	GDG limit (versions) to define.
X2DSCB	Dummy DSCB to be used, or to define for the IPC backup job. You can specify '&&L1PREF.. ' to use the CA-ASM2 prefix defined in your \$OPTIONS.
X2IPAR	PDS data set name containing the Delete/Define statements for the IPC and Journal. You can specify '&&L1PREF.. ' to use the CA-ASM2 prefix defined in your \$OPTIONS.
X2IDELD	Member name of the IPC Delete/Define statements.
X2IDELJ	Member name of the Journal Delete/Define statements.
X2JLIB	Optional procedure library where the CA-ASM2 procedures reside. If filled in, a JCLLIB statement is generated in the generated JCL. If not used this field can be blank (' '). You can specify '&&L1PREF.. ' to use the CA-ASM2 prefix defined in your \$OPTIONS.
X2TLMS	If you are a CA-TLMS user, enter the data set name of your VMF. If you don't have TLMS, enter this field as ' ' when coding directly in the macro, or blank when coding from the ISPF panels.
X2TUN	Generic unit name, used for full restore JCL.
X2VIO	If your ISPCTL1/2 data sets are on VIO, set this option to Y.
X2REX	If you have REXX available, set this option to Y.
X2JES3	If you are a JES3 user, set this option to Y.
X2SMS	If you have SMS active, set this parameter to Y.
X2SUB	If you want PRG1 or PRG3 users to receive the generated JCL in Edit, set this option to N. If you want the generated JCL to be directly submitted without an Edit, set this option to Y.

X2FFD	During a restore with NEWVOL, and using the FORCE parameter, the original file is uncataloged. If you want the ISPF interface to delete the original file when you restore an existing file with NEWVOL and FORCE, set this parameter to Y.
X2PS1-4	If you archive and recatlog using pseudo volsers, specify up to 4 different pseudo volsers used. This informs the interface if a file is archived and recataloged in CA-ASM2 or simply not available. If you use only 1 pseudo volser, enter X2PS1.
X2UND	If a file is in delete status (using previous \$DA or \$DB commands), and you select that file for restore, the restore fails. Specifies whether the interface sets the selected file when it is in delete status.
X2OPT	If this field is left blank, the \$OPTION module currently allocated to your TSO session is used, or the default \$OPTIONS is used if none was allocated. If you want to force your users to use this interface with a specific \$OPTION module, enter the last character in this parameter. A check is made to see if another \$OPTION is allocated. If so, it is freed and your specified value allocated.
X2BT	Default version to select from the selection panel. The value * selects all available versions. The value 0 only selects the most recent version of a file. This value works in conjunction with X2LO.
X2LO	Logical operator for X2BT. The value EQ is a good default.
X2EURO	If you want all dates displayed in European format, set this parameter to 1, for American format specify 0.

C.3 Special Access Table for PROG, PRG1 Users

PROG and PRG1 authority levels only have access to data sets beginning with their userid. In some cases this is not enough, but higher authority levels would give too much access.

The following 3 parameters allow you to define maskings that PROG and PRG1 users can also access. They are repeated 5 times, so that you can define 5 different masks to access.

X2MSK1 (up to 5) Mask field (part of data set name). Maximum of 20 characters.

X2BEG1 (up to 5) Beginning position of mask (X2MSK1) in the actual data set name.

X2LNG1 (up to 5) Length of mask. This is only needed when coding directly in the macro. When defining from ISPF panels, this field is calculated.

C.3.1 Sample Mask Definition

```
X2MSK1 : 01
X2BEG1 : 06
X2LNG1 : 02
```

The objective is that PROG or PRG1 users also have access to all data sets that have 01 in the 6th and 7th position. Example: `sampl01.TEST.DATASET`.

```
X2MSK1 : sampl01.
X2BEG1 : 01
X2LNG1 : 07
```

This sample is the same as the previous one except that part of a data set name was entered, testing begins from position 1.

C.3.2 Using Variables in Access Table

For users having local applications that pick up access profiles (Ex. CA-ACF2), you can call a CLIST or REXX to fill in these values. This means that you can code in the REXX all needed statements, calls or logic to use these values.

To activate:

- Set the value of X2BEG1 to L1AAMAS1 (if you need more variables, set X2BEG2 to L1AAMAS2...)
- Use member L1AAMASK and L1AAMAS1 as samples.
- Member L1AAMASK calls L1AAMAS1 with the parameter NEWAPPL(L1AA) which is used to update the variables in the CA-ASM2 profile pool (the member name is not important, you can copy the instruction only).
- Add this code source to your application so that these values are set before using the CA-ASM2 panels.

C.4 CA-7 Fields

X2CA7	If your site has CA-7 and you want to move restore jobs to CA-7, set this parameter to Y. If this parameter is not set to Y, the following 8 options are of NO importance.
XA7JCL	The data set name of the CA-7 library where you want to copy the restore JCL.
XA7ID	JCLID of the library specified in XA7JCL.
XA7CMDS	Data set name of the CA-7 communication data set.
XA7IN	CA-7 batchin data set name used to access CA-7.
XA7OUT	CA-7 batchout data set name to access CA-7.
XA7LOAD	CA-7 loadlib name.
XA7TMP	Temporary data set name for each user to receive the BTI output. A good default is &&SYSUID..CA7BTI.DATA.
XA7BTI	Temporary data set name, for each user, to create the BTI SYSIN. A good default is &&SYSUID..CA7BTI.SYSIN.

C.5 Additional Security Check

X2DSNSEC	If you want to activate an additional security check during the file selection (READ access), and a second check when the NEWNAME is entered (UPDATE access) set this parameter to Y.
X2DSNSYC	If a previous security check must be done for all types of users, set this parameter to Y. If this extra security check is not needed for OPER and SYST users, set this parameter to N.
X2L1BYP0	<p>The ASM2 Restore Selection menu option 0 can display 3 different Profile Update panels. If you do not want PROG and PRG1-3 users to have access to the first two panels, set this parameter to Y.</p> <p>If this value is set to Y, check CLIST L1AAC052. This CLIST presets the values found on these two profile update panels, and you can modify them as needed.</p> <p>If all users may access these profile update panels, set this value to N.</p>

Appendix D. ISPF Primary Option Menu

There are two ways of invoking the ISPF interface so that you can operate on data sets that have been backed up or archived. These include the ASM2 Restore Selection menu described in this document and using option 3.4 of the ISPF Primary Option menu.

D.1 Option 3.4

Selecting option 3.4 from the ISPF Primary Option menu displays the following panel.

```
----- DATA SET LIST UTILITY -----
OPTION  ===>

blank - Display data set list *      P - Print data set list
V    - Display VTOC information only PV - Print VTOC information only

Enter one or both of the parameters below:
DSNAME LEVEL  ===> Userid.DEVL.*
VOLUME       ===>

INITIAL DISPLAY VIEW  ===> VOLUME  (VOLUME,SPACE,ATTRIB,TOTAL)
CONFIRM DELETE REQUEST ===> YES    (YES or NO)

* The following line commands are available when the list is displayed:

B - Browse data set      C - Catalog data set      F - Free unused space
E - Edit data set        U - Uncatalog data set    = - Repeat last command
D - Delete data set      P - Print data set
R - Rename data set      X - Print index listing
I - Data set information M - Display member list
S - Information (short)  Z - Compress data set      TSO cmd, CLIST or REXX exec
```

Leave the OPTION field blank to display a data set list and enter the dsname (masks allowed). A panel displaying the selected data set(s) is displayed as shown in the following figure. In the example shown, all data sets beginning with Userid.DEVL.* are displayed.

The INITIAL DISPLAY VIEW field determines which view of the data set list information that you initially wish to view. More information about each data set is obtained by typing in RIGHT or LEFT on the command line to shift through this additional information.

```

DSLST - DATA SETS BEGINNING WITH Userid.APARTAPE.* ----- ROW 1 OF 6
COMMAND ==>                                         SCROLL ==> PAGE

COMMAND      NAME                                     MESSAGE      VOLUME
-----
RL      Userid.DEVL.L1AA                                UK0002
        Userid.DEVL.L1AA.BK960218                      ARCHIV
        Userid.DEVL.L1AA.BK960415                      ARCHIV
        Userid.DEVL.L1AA.BK960420                      ARCHIV
        Userid.DEVL.L1AA.BK960620                      ARCHIV
        Userid.DEVL.L1AA.BK960812                      ARCHIV
        Userid.DEVL.L1AA.BK960830                      ARCHIV
        Userid.DEVL.L1AA.BK960908                      ARCHIV
        Userid.DEVL.L1AA.BK960917                      ARCHIV
        Userid.DEVL.L1AA.BK961104                      ARCHIV
        Userid.DEVL.L1AA.BK961128                      ARCHIV
        Userid.DEVL.L1AA.BK960123                      ARCHIV
        Userid.DEVL.L1AA.BK960217                      ARCHIV
        Userid.DEVL.L1AA.BK960401                      ARCHIV
***** END OF DATA SET LIST *****

```

This panel allows you to issue restore commands for needed data sets. Place the appropriate command to the left of the data set(s) to be restored.

Enter RB to obtain all backup versions for that data set.

Enter RA to obtain all archive versions (or RR if RA is used by RACF).

Enter RL to obtain all backup *and* archive versions.

Any of the above commands can build an ISPF table with all available versions for the requested file. This information is taken directly from the active IPC. The table is shown on a display panel from which you can obtain pertinent information and issue all needed commands.

```

----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 9
COMMAND ==>                               Scroll ==> DATA
M097 - Use DEL command to only keep most recent version of BKUP or ARCH
CMD   DATASETNAME                          R VERS IPCDATE  TIME  T
-----
      Userid.DEVL.L1AA                      0000 04-03-96 09:55 B
      Userid.DEVL.L1AA                      0001 04-02-96 11:17 B
      Userid.DEVL.L1AA                      0002 10-01-96 03:44 B
      Userid.DEVL.L1AA                      0003 03-06-93 09:50 B
      Userid.DEVL.L1AA                      0004 14-05-93 09:57 B
      Userid.DEVL.L1AA                      0005 17-04-93 11:23 B
      Userid.DEVL.L1AA                      0006 06-04-93 03:57 B
      Userid.DEVL.L1AA                      0007 23-03-93 04:18 B
      Userid.DEVL.L1AA                      0008 22-03-93 13:40 B
***** END OF ASM2 REQUEST *****

```

Depending on a previous execution of this application, you receive a one or two line display for each data set. To switch to a two line display enter EXT on the command line, to switch to a one line display, enter NORM on the top line.

```

----- COMPUTER ASSOCIATES - ASM2 4.2 ----- Row 1 of 9
COMMAND ==>                               Scroll ==> DATA

CMD   DATASETNAME                          R VERS IPCDATE  TIME  T
TRKS  TAPEVOL   TAPESEQ    DISKVOL    RELDATE  LASTUSED  IPCTYPE  RETPD
-----
00405  Userid.DEVL.L1AA                      0000 04-03-96 09:55 B
      *DISK*                                UK0002    04-03-96  USER   - 0493
00345  Userid.DEVL.L1AA                      0001 04-02-96 11:17 B
      *DISK*                                UK0002    04-02-96  USER   - 0222
00330  Userid.DEVL.L1AA                      0002 10-01-96 03:44 B
      *DISK*                                UK0002    10-01-96  USER   - 0528
00180  Userid.DEVL.L1AA                      0003 03-06-93 09:50 B
      *DISK*                                CAI800    24-02-93  USER   - 0553
00165  Userid.DEVL.L1AA                      0004 14-05-93 09:57 B
      *DISK*                                CAI800    14-05-93  USER   - 0552
00375  Userid.DEVL.L1AA                      0005 17-04-93 11:23 B
      *DISK*                                CAI800    17-04-93  USER   - 0528
00225  Userid.DEVL.L1AA                      0006 06-04-93 03:57 B
      *DISK*                                CAI800    06-04-93  USER   - 1239
00196  Userid.DEVL.L1AA                      0007 23-03-93 04:18 B
      *DISK*                                CAI800    23-03-93  USER   - DELT
00196  Userid.DEVL.L1AA                      0008 22-03-93 13:40 B
      *DISK*                                CAI800    22-03-93  USER   - 0528

```

Note the SElection field before each version of the file. In this selection field you can invoke different line commands (described in Chapter 5).

D.2 Invoking ISPF from Command Line

You can define, using ISPF option 3.9, a new shortcut command to have direct access to CA-ASM2 functions. This option displays the following panel.

```
File Menu Utilities Help
-----
ISPUCMD                               Update @@@@CMDS          Row 1 to 2 of 2
Command ==>                          Scroll ==> PAGE

Insert (I), delete (D), repeat (R) and edit (E) command entries.
Enter END command to save changes or CANCEL to end without saving.

      Verb      T Action
      ASM2      0 SELECT CMD(%L1AAC001 CLST A B C) NEWAPPL(L1AA)
***** Bottom of data *****
```

This panel allows you to access the ISPF User Interface by customizing the ISPF Command Table. When this table is saved in a common ISPTLIB, the interface can be accessed by simply typing ASM2 on the command line.

Index

Special Characters

- \$AI command 2-38
- \$AR command 2-6, 2-7, 2-21, 2-31
- \$BI command 2-38
- \$BK command
 - explicit backup 2-11
 - explicit request 2-10
 - generated 3-27, 3-69
 - parameters 2-21
- \$CATID field 4-2
- \$CHGSR
 - field description 3-58
- \$CI command 2-18, 2-38
- \$COPYTP utility 3-64
- \$CU command 2-18, 4-4
- \$DEFRAG
 - volume records
 - description 4-30
 - selecting 4-30
 - volume unload 4-31
- \$EXPBKUP OFF parameter 3-45
- \$MAINT
 - listing 3-62, 3-66
 - options 3-59
 - tape list 3-63
- \$MEM\$ 5-12, 6-41
- \$NEWTAPE parameter 3-65
- \$OPTION 3-41, 3-52, 3-71
- \$PURGETP
 - command 3-59, 3-61, 3-63
 - field description 3-58
- \$QM command 2-21
- \$RA command 2-6, 2-21, 2-31
- \$RB command 2-21
 - command queue 2-21
 - invoking 5-11
 - ISPF table sort 3-46
 - NEWVOL parameter 3-44
 - parameters 2-23

- \$RB command (*continued*)
 - RLD cell 4-34
 - storage 3-45
 - SYSUT2 file 3-38
 - tape optimization 6-52
 - user request 2-10
- \$RELDEXT reload exit 2-8, 2-11
- \$RETDAYS 4-4
- \$RSVP commands
 - building 2-33
 - ISPF 2-25
 - panel variables 2-27
 - processing 2-24
 - sample 2-33
 - saved commands 2-24
 - saved commands panel 2-25
 - tailoring 2-31
 - using 2-24
- \$SM command 2-13
- \$UA command 4-4
- \$UB command 4-4
- \$US command 2-13

A

- A/B type
 - field description 4-24
- Accessing CA-ASM2 2-3
- Active
 - \$OPTIONx 3-71
 - CA-7 A-3
 - data sets 3-67
 - tapes 3-65
- AIX construct 5-9, 5-11
- Alias
 - incomplete 6-19
 - level 5-9
 - names 4-6
 - PDSAA 5-7

- All data sets from a specific tape volser
 - field description 2-42
- All files from a disk before-after a date
 - field description 2-42
- All previous options together
 - field description 2-42
- ALLOC TSO 2-27
- Allocation
 - current 3-70
 - cylinders 2-16
 - DSCB 1 4-12, 4-22
 - indicators 4-9, 4-19
 - journal 3-56, 3-70
 - secondary 4-12, 4-22
 - space 2-13, 2-16
 - total 4-12, 4-22
 - tracks 2-16
 - type 4-12, 4-22
 - volume 4-12, 4-22
- Alternate index
 - See* VSAM
- American date type 5-16
- Applic
 - field description 3-12
- Application
 - defining example 6-16
 - definitions
 - field description 3-25
 - move to ISPTLIB 3-30
 - panel 3-27, 6-16
 - selecting 3-26
 - VSAM 3-25
 - display P022 3-8
 - field description 3-8, 3-12
 - restore
 - description 3-12
 - example 6-21
 - field descriptions 3-12
 - warning 3-15
- Archive
 - description 2-6
 - operands 2-8
 - parameters 2-8
 - pseudo volser 6-2
 - queuing 2-7
 - system-initiated 2-7
 - types 2-7
 - user-initiated 2-7
 - utility panel 2-6
- Archive test
 - field description 3-60

- ASM2 command
 - field description 2-21
- ASM2 database administrator
 - field description 2-4
- ASM2 restore selection menu 2-41
- ASM2BKP 3-55
- ASM2BKUP step 3-53
- ASM2CMDU 5-20, 6-6, 6-11, 6-27
- ASM2DEXB execution 3-69, 6-23
- ASM2EXPB 3-15, 3-69, 6-23
- ASM2MNT 3-53, 3-65
- ASM2REXX
 - EXEC 3-48, 6-48
- ASM2VOL
 - field description 2-23
- ASO cell 4-6, 4-16
- Authority code
 - field description 3-6
- Authority levels 3-52
 - JCL 5-11

B

- B line command 5-3
- Back version
 - field description 2-8, 2-11, 2-19
- Backup
 - description 2-10
 - field description 2-15
 - history 3-14
 - IPC 3-55
 - journal 3-55
 - member 3-68
 - operands 2-11
 - panel description 3-53
 - parameters 2-12
 - queuing 2-11
 - system-initiated 2-11
 - user-initiated 2-11
 - utility 2-10
- Backup name
 - field description 2-16
- Backup unit
 - field description 2-16, 3-54
- Backup volume
 - field description 2-16
- Base cluster
 - See* VSAM
- Bk nostat
 - field description 3-69

BKDATE
 field description 3-21
Bktype
 field description 3-21
Bkup all
 field description 3-68
Boolean selection 2-28, 2-34
Browse
 mode 5-2
 utility 2-24
Buffer space
 alteration 6-35
 calculate 3-34, 6-30
 current 3-30
 field description 3-34
 manual update 6-30
 optimal 3-30, 3-32
 optimal size 6-31
 optimize 3-25, 6-28
Byp.Prof
 field description 3-72
Bypass tape totals
 field description 3-60

C

CA-3 cell 4-36
CA-6 cell 4-37
CA-7
 interface description A-1
 invoking A-1
 JCL A-2
 parameters A-1
 restore JCL 3-8
 restore request 2-39, 3-8, A-1
CA-ASM2
 accessing 2-3
 ASM2 restore selection menu 2-41
 ISPF mode 2-3
 maintenance 3-58
 primary selection menu 2-1
 special definitions 3-25, 6-28
CA-Earl 3-59, 3-60, 3-63
CA1EARL procedure 3-59
CA1TMC 2-27
CA1VMF files 2-27
CALC dir info
 field description 2-14
Calculate bufferspace
CAN mass command 5-15

Cartridge tapes 3-54, 3-58
CAT
 field description 5-10
Cat stat
 field description 4-4, 4-24
Catalog
 \$DEFrag volume record table 4-31
 \$DEFrag volume record update 4-32
 COM cell update 4-38
 description 2-18
 inquiry
 delete parameters 2-18
 operands 2-19
 panel 2-18
 parameters 2-19, 2-20
 ISPF 2-44
 maintenance
 description 2-44, 4-1
 facility 2-44
 RLD cell 4-34
 SMS cell update 4-35
 unload
 cells table 4-25
 destination cell 4-29
 destination table 4-26, 4-27, 4-28
 version table 4-24
 volume cell 4-22
 update utility 2-44, 4-23, 4-30
Catalog at reload
 field description 2-9, 2-12
Catalog type
 field description 2-19
CATEARL procedure 3-59
Cell list 4-5, 4-15
CLIST
 LIAAMAS1 3-72
Cluster
 See VSAM
CMD
 field description 3-23
CMMV field B-3
COM mass command 5-15
Command
 field description 3-23
Command source
 field description 2-21
Commands
 \$AI 2-38
 \$AR 2-6, 2-7, 2-21, 2-31
 \$BI 2-38
 \$BK 2-10, 2-11, 2-21, 3-27, 3-69

Commands (*continued*)

\$CI 2-18, 2-38
\$CU 2-18, 4-4
\$QM 2-21
\$RA 2-6, 2-21, 2-31
\$RB 2-21, 3-38, 3-44, 3-46, 4-34, 5-11, 6-52
\$SM 2-13
\$SUBCA7 A-1
\$UA 4-4
\$UB 4-4
\$US 2-13

Display panel

B line command 5-3
CAN mass command 5-15
COM mass command 5-15
CRI mass command 5-16
D line command 5-3
DEL mass command 5-17
E line command 5-4
EXT mass command 5-18
G line command 5-4
L line command 5-5
M line command 5-6
MDEL mass command 5-19
MGEN mass command 5-20
MRES mass command 5-21
MUPD mass command 5-22
NORM mass command 5-23
P line command 5-7
PROF mass command 5-24
PRT mass command 5-24
Q line command 5-7
R line command 5-8
S line command 5-9
SRT mass command 5-25
U line command 5-12
X line command 5-13
L1SAVE 3-32, 3-51
line commands 5-2
mass commands 5-14

Comment

cell 4-38
field description 2-8, 2-11, 2-22, 3-21, 3-29

Compress

field description 2-15

Compression

parameters 2-15
PDS 2-15

Confirm delete

field description 3-6

Confirmation panel

application 3-13
delete entry 3-33
delete unload record 4-4
file delete 3-6
masks 6-22
selections 5-26

CONT

field description 3-75

CONTIG

field description 3-74

Conventions

ISPF 4-3
TSO 2-8, 2-11

CRI mass command 5-16

Cross-reference menu 3-49

CSECT

customized user 2-32
user 2-31

Current

allocation 3-70
utilization 3-70

Customization values 3-71

Customized user CSECT 2-32

CUU

field description 3-50

Cylinders

backup copy allocation 2-16
backup utilization 3-54
unused space 2-16

D

D line command 5-3

Danish language display 2-4

Data set

characteristics 4-28
display panels
 See Display panels
information display 2-13
list utility 6-7
obsolete 2-13
PO 2-25, 4-12
queuing 2-7, 2-11
restore
 composite 3-20
 description 3-10
 field descriptions 3-10
 from specific tape 3-16
 multiple 3-12
 specific date 3-18

Data set (*continued*)
 sequential 4-23
 tape copy 4-28
 usage 2-14
 Data set name
 field description 2-8, 2-11, 2-14, 2-15, 2-19, 2-22
 Data set or mask restore
 field description 2-42
 Data set type
 field description 2-14, 2-15, 2-19
 Database administrator 2-4, 2-44, 4-1
 Datasetname
 field description 3-23
 Datasetname prefixes
 field description 3-60
 DATE
 field description 2-23
 Default version number on selection
 field description 3-7
 Definitions - existing 3-32
 DEL mass command 5-17, 5-19, 5-22
 Delete files when force
 field description 3-6
 Delete JCL after execution
 field description 3-8
 Delete status
 logical 3-24
 MDEL command 5-19
 placing a file in 5-2
 processing 5-26
 restore file 2-38
 retention period 5-12
 undelete job 3-6
 Delete table processing 5-17
 Delete/define
 default PDS 3-35
 IDCAMS 2-42, 3-25, 3-34
 JCL 3-31
 of IPC 3-56
 VSAM data set names 2-39
 VSAM file 3-30
 Dialog parameters
 ISPF 2-4
 Directory
 blocks 4-12
 field description 2-16
 size 2-16
 Disk
 copy characteristics 4-27
 space management utility 2-13
 staging area 2-7, 4-26
 Disk space management utility
 panel 2-13
 Disk volume name
 field description 2-9, 2-12
 Disk-to-disk 2-7, 3-7, 4-26
 Disk-to-tape 2-6, 2-10
 DISKVOL
 field description 3-24
 Display all selected files for restore
 field description 3-7
 Display comments
 field description 2-19
 Display panels
 description 3-22
 extended field descriptions 3-24
 normal field descriptions 3-23
 Display VSAM files from full backup
 field description 3-7
 DMC 4-36
 DSCB
 dummy unit 3-54
 format 4-12
 subcells 4-12
 to display 4-12
 DSCB to display
 field description 4-12
 DSN sec
 field description 3-72
 DSN security 3-72
 DSN(s)
 field description 3-29
 Dsnmask
 field description 3-12, 3-16, 3-18, 3-20
 Dummy DSCB unit
 field description 3-54
 Duplex tapes
 in tape management 3-64
 integrity check 2-40, 3-65
 IPC pointers 3-58
 number of 3-62
 DVB cell 4-32

E
 E line command 5-4
 Edit mode
 ISPF 5-2, 5-4
 JCL 2-38
 Editor 2-24, 2-26
 End-of-file reset 2-17

EQ

field description 2-29

European date type 5-16

Examine only incremental backups

field description 3-45

Examples

building a \$RSVP command 2-33

defining an application 6-16

defining specific VSAM 6-28

full-volume restore and recovery 6-42

IDCAMS delete noscratch 5-20

index level 2-15

reloading all files not online. 6-12

restoring a file from the selection list 6-2

restoring a file using option 3.4 6-7

restoring a specific VSAM data set 6-33

restoring an application 6-21

restoring from a member backup 6-39

Execution class

field description 3-8

Existing definitions 3-32

EXT mass command 3-23, 5-18

Extended display

field description 3-5

Extended functionality processing

description 2-38

Extended ISPF Applications

Extended ISPF user interface

description 2-38

ISPF user interface 2-38

EXXV field B-3

F

Features summary 1-1

Field descriptions

\$CHGSER 3-58

\$PURGETP 3-58

A/B type 4-24

all data sets from a specific tape volser 2-42

all files from a disk before-after a date 2-42

all previous options together 2-42

an entry 2-20

applic 3-12

application definitions 3-25

application restore 3-12

archive test 3-60

ASM2 command 2-21

ASM2 database administrator 2-4

ASM2VOL 2-23

authority code 3-6

Field descriptions (*continued*)

back version 2-8, 2-11

backup 2-15

backup name 2-16

backup unit 2-16, 3-54

backup version 2-19

backup volume 2-16

bk nostat 3-69

BKDATE 3-21

bktype 3-21

bkup all 3-68

Byp.Prof 3-72

bypass tape totals 3-60

CALC dir info 2-14

calculate bufferspace 3-34

cat stat 4-4, 4-24

catalog at reload 2-9, 2-12

catalog type 2-19

CMD 3-23

command 3-23

command source 2-21

comment 2-8, 2-11, 2-22, 3-21, 3-29

compress 2-15

confirm delete 3-6

CONT 3-75

CONTIG 3-74

CUU 3-50

data set name 2-8, 2-11, 2-14, 2-15, 2-19, 2-22

data set or mask restore 2-42

data set type 2-14, 2-15, 2-19

datasetname 3-23

datasetname prefixes 3-60

DATE 2-23

default version number on selection 3-7

delete files when force 3-6

delete JCL after execution 3-8

directory 2-16

disk volume name 2-9, 2-12

DISKVOL 3-24

display all selected files for restore 3-7

display comments 2-19

display P022 3-8

display VSAM files from full backup 3-7

DSCB to display 4-12

DSN sec 3-72

DSN(s) 3-29

dsnmask 3-12, 3-16, 3-18, 3-20

dummy DSCB unit 3-54

EQ 2-29

examine only incremental backups 3-45

execution class 3-8

Field descriptions (*continued*)

extended display 3-5
FILE(S) 2-23
files 3-29
for \$DEFRAg volume records 4-1
for unload records 4-1
force reload 2-9, 2-12
from date 3-69
from/to 3-19
IPCDATE 3-23, 3-50
IPCTIME 3-50
IPCTYPE 3-24
IV 3-75
IXVTOC 3-74
jobcard info 3-8
keep 2-15
keep first nn data sets 2-20
language 2-4
LASTUSED 3-24
LE 2-29
level 3-68
like 3-68
list 2-16
list active data sets 2-19
list inactive data sets 2-19
list only last NNNN days 2-19
list specific tape volume 2-19
logical queue name 2-8, 2-12
LOxxx check 3-60
LT 2-29
manual update of bufferspace 3-34
mask 3-72
messages alarm 2-4
msgclass 3-8
MSS 2-22
MSS data sets 2-14
multiple data sets or application restore 2-42
multiple JCL edits 3-6
NE 2-29
new data set name 2-9, 2-12
new expiration date 2-20
NEWNAME 2-23
NEWVOL 2-23, 3-42
OPER 3-6
optimized output dsname mask 3-46
original volume 2-12
ORIGVOL 2-23
output volume 4-7, 4-17
PDS directory blocks 4-12
percent save 2-16
permanent archive 2-8

Field descriptions (*continued*)

permanent archives 2-19
PRG1 3-6
PRG2 3-6
PRG3 3-6
primary 2-16
primary volume 4-24
print fields 2-22
profile update 2-42
qualifier 2-16
qualifier to add to DSN 2-9, 2-12
qualify 2-22
queue name 2-22
R 3-23
ratio 3-67
recovery selection 3-37
relabel your NEWVOL 3-42
RELDATE 3-24
release 2-15
RENVDS 3-42
RENVTOCIX 3-42
retention days 2-8, 2-12
RETPD 2-22, 3-24, 3-69
row nn of nn 3-23
save 2-16
secondary 2-16
show member backup P022 3-8
show standard heading 2-19
simulate 3-58
SMS 3-74, 3-75
sort 3-11, 3-13, 3-17, 3-19, 3-21
sort fields 2-22
space (cyl) 3-54
space calculation 3-5
statist 3-69
status 3-50, 4-24
submit to CA-7 3-8
SUBSYSTEM 2-23
SYSID 3-21
SYSOUT 2-16
SYST 3-6
system ident 4-4, 4-24
T 3-23
tape - disk 3-54
tape check 3-58
tape data set 2-14
tape dsname 4-7, 4-17
tape mgt. 3-60
TAPESEQ 3-24
tapevol 3-16, 3-20, 3-24
target volume 2-9, 2-12

Field descriptions (*continued*)

TIME 2-23, 3-23
to 3-21
to specify an alternate IPC 4-1
total # of restore jobs 3-7
TOTTRK 3-74
TRKFR 3-75
TRKFREE 3-74
TRKS 3-24
TRKS/CYLS 2-16
TRKTOT 3-75
type 2-22, 3-12, 3-16, 3-18, 3-20, 3-27, 3-74, 3-75
unit 2-22, 3-41
UNLD date 4-24
UNLD time 4-24
UNLD type 4-24
update/delete online 3-5
use origvol 3-5
use popup panels 3-6
USERID 2-23
validate data set exists 2-8, 2-12
verbose 3-60
VERS 3-23
version 3-10, 3-13, 3-17, 3-19, 3-21
volser 3-18, 3-20, 3-50, 3-54
volume 2-22, 3-39, 3-68
volume n bytes 4-7
VSAM exceptions 3-25
VSAM table check 3-5
VSAMASSOC 2-22
workfile prefix 3-8
FILE(S)
field description 2-23
Files
field description 3-29
For \$DEFRAg volume records
field description 4-1
For unload records
field description 4-1
FORCE
field description 5-10
Force reload
field description 2-9, 2-12
Forward merge 3-65
Forward merge that must be submitted manually.
French language display 2-4
Frequency of use 2-6, 2-13
From date
field description 3-69
From/to
field description 3-19

FTYX field B-4
Full volume restore
selection 2-42
Full-volume restore
available versions 2-39
description 3-37
example 6-42
generating 2-38
JCL 3-42
needed volsers 2-39

G

G line command 5-4
GDG data sets
backup steps 3-55
full backup 3-60
integrity checks 3-59
GDG names 3-55, 3-56
GE
field description 2-29
LT 2-29
German language display 2-4
Group restore 5-2, 5-4
GT
field description 2-29

H

Hardcopy utility 2-27
HEADING1 saved list 2-25
History - backup 3-14
HOMEVOL
field description 5-10

I

ICKDSF step 3-42
IDCAMS 2-42, 3-25, 3-30, 3-34, 3-53
Incremental recovery
full volume backup records 4-30
multiple jobs 3-47
restore commands 3-38, 3-43
selecting 3-37
SYSUT2 file 3-46
Index
alternate 2-22, 3-8, 4-3, 4-6, 4-13, 4-14, 4-16
component name 3-34
high level 2-22
levels 2-14, 2-15, 2-19
VTOC 3-74, 3-75

Initialization of journal 3-56
Input transaction file 2-30
Integrity checks 2-40, 3-58
Invoke
 ISPF 3-3
 post-sort exit 2-32
 selection exit 2-32
IPC
 backup 3-55
 CA-3 cell 4-36
 CA-6 cell 4-37
 catalog ID 4-3
 comment cell 4-38
 DVB cell 4-32
 IXR cell 4-33
 job parameters 3-54
 job selection 3-53
 list 5-5, 6-41
 pointers 3-58
 print 5-24
 reorganization 3-57
 restore
 from version -1 3-56
 from version 0 3-56
 with import 3-56
 with repro 3-56
 RLD cell 4-34
 SMS cell 4-35
 statistics 3-70
 update 5-12
IPCDATE
 field description 3-23, 3-50
IPCTIME
 field description 3-50
IPCTYPE
 field description 3-24
ISPF
 \$RSVP commands 2-25
 archive utility 2-6
 backup utility 2-10
 browse
 utility 2-24
 catalog maintenance facility 4-1
 conventions 4-3
 dialog parameters 2-4
 disk space management utility 2-13
 edit mode 5-2, 5-4
 editor 2-24, 2-26
 hardcopy utility 2-27
 invoking 3-3
 key fields B-2

ISPF (*continued*)
 mode 2-3
 normal fields B-3
 option 3.4 6-1, 6-7
 primary option menu 6-6
 statistics 3-69
 support 2-2
 table 3-21, 3-26, 3-46
 table variables B-1
 user interface 2-38, 2-39
ISPFIL ddname 3-47
ISPPROF library 3-26, 3-31, 6-17
ISPTABL
 ddname 3-26
 library 6-29
ISPTLIB library 3-31
 application table 3-26, 3-29
 displaying 3-26, 6-17
 VSAM table 6-29
Italian language display 2-4
IV
 field description 3-75
IXR
 cell 4-33
 updates 4-33
IXVTOC
 field description 3-74

J

JCL
 authority levels 5-11, 6-6
 CA-7 A-2
 deleting A-1
 edit mode 2-38
 full-volume restore 3-42
 generation 3-5, 3-54
 jobname A-2
 multiple edits 3-5, 6-35
 needed parameters 3-54
 PRG2 users 5-11
 RSPRINT 2-27
 saving 3-51
 separate edits 3-6
Jobcard info
 field description 3-8
Journal
 allocation 3-56
 backup 3-55
 initialization 3-56

Julian date 2-20, 2-23, 3-44

K

Keep

field description 2-15

Keep first NN data sets

field description 2-20

Key fields ISPF B-2

KSDS 4-6, 4-16

L

L line command 5-5

L12TDSN field B-3

L12TPUN field B-3

L12VOLn field B-3

L1AAMAS1 CLIST 3-72

L1AAXMOD

authority levels 3-52

delete/define statements 3-32

DSN security 3-72

exception list 3-6

GDG names 3-55, 3-56

mask fields 3-72

values 2-43

L1DSN field B-3

L1DSNT key field B-2

L1EURO parameter B-4

L1FDEL field B-4

L1LEVEL field B-3

L1SAVE command 3-32, 3-51

L1SEQ field B-3

L1TAPE field B-3

L1TPUB field B-4

L1TYPE field B-3

L1UDAT key field B-2, B-3, B-4

L1UPDATE field B-3, B-4

L1UTIME B-3

L1UTIT key field B-2

L1VOL field B-3

Language

field description 2-4

Language selection 2-4

LASTUSED

field description 3-24

LDELETE 4-24

LE

field description 2-29

Level

field description 3-68

Libraries

CA-7 3-8, A-2

ISPPROF 3-26, 3-31, 6-17

ISPTABL 6-29

ISPTLIB 3-26, 3-31, 6-17

Like

field description 3-68

Line command descriptions 5-2

List

field description 2-16

IPC 6-41

info 5-5

List active data sets

field description 2-19

List inactive data sets

field description 2-19

List only last nnnn days

field description 2-19

List specific tape volume

field description 2-19

Logical queue name

field description 2-8, 2-12

Logon A-3

TSO 2-3

LOxxx

checking 2-40, 3-60, 3-61, 3-65

files 3-53, 3-61, 3-65

volser 3-60

LOxxx check

field description 3-60

LT

field description 2-29

M

M line command 5-6

Maintenance

CA-ASM2 3-58

catalog 2-4

panel 2-44

output 3-60

run date 3-60

Manual update of bufferspace

field description 3-34

Mask

field description 3-72

Mask fields 3-72

Mass

commands 5-14, 6-23

delete processing 5-19

generate processing 5-20

Master tape 2-40, 3-58, 3-64
MDEL mass command 5-19
Member backup
 description 3-68
 selection 3-68
Messages alarm
 field description 2-4
 option 2-26
MGEN mass command 5-20, B-1
MRES mass command 5-21, 6-13, 6-24
Msgclass
 field description 3-8
MSS
 field description 2-22
MSS data sets
 field description 2-14
Multiple Data sets or Application restore
 field description 2-42
Multiple edits
 JCL 3-5, 6-35
Multiple JCL edits
 field description 3-6
Multiple jobs 2-39, 3-47, 5-27
MUPD mass command 5-22

N

Naming conventions - TSO 2-13, 2-15
NE
 field description 2-29
New data set name
 field description 2-9, 2-12
New expiration date
 field description 2-20
New suffix 3-52
NEWNAME
 field description 2-23, 5-9
NEWQUAL
 field description 5-9
NEWVOL
 field description 2-23, 3-42, 5-10
 parameter 2-39, 3-30, 3-44
NOASSOC
 field description 5-10
NORM mass command 5-23
Number of tape restore jobs only
 field description 3-7

O

Objects - VSAM 2-32
Obsolete data sets 2-13
Online volume list 3-39, 3-74
Online volumes space map 3-75
OPEN modification 2-14
OPER
 field description 3-6
OPER authority 3-72
Optimized output dsname mask
 field description 3-46
Option 3.4
 example 6-7
 restoring a file 6-1
Original volume
 field description 2-12
ORIGVOL
 field description 2-23, 5-10
OS catalogs 2-27, 4-11
Output transaction file 2-30
Output viewing mode 2-26
Output volume
 field description 4-7, 4-17

P

P line command 5-7
Panel descriptions
 \$DEFRAG parameters 3-42
 \$MAINT options 3-58
 \$RSVP saved commands 2-25
 application definition 3-26
 archive utility 2-6
 ASM2 restore selection menu 2-41
 backup utility 2-10
 catalog
 \$DEFRAG volume record table 4-31
 \$DEFRAG volume record update 4-32
 association table 4-6, 4-16
 CA-3 cell update 4-36
 CA-6 cell update 4-37
 COM cell update 4-38
 inquiry or update 2-18
 IXR cell update 4-33
 RLD cell update 4-34
 SMS cell update 4-35
 unload cells able 4-15
 unload cells table 4-5, 4-25
 unload destination cell 4-7, 4-17, 4-18, 4-27
 unload destination table 4-26, 4-28
 unload version table 4-4, 4-14, 4-24

Panel descriptions (*continued*)

catalog (*continued*)

unload volume cell 4-12, 4-22

unload volume table 4-11, 4-21

UPC cell update 4-9, 4-10, 4-19, 4-20

update utility 2-44, 4-1, 4-3

change or reload options 3-52

criteria 5-16

cross-references 3-49

customization values 3-71

defined definitions 3-28

delete ARCH entry 5-3

delete table processing 5-17

dialog parameters 2-4

disk space management 2-13

full restore 3-39

group restore/reload 5-4

incremental recovery 3-39, 3-43, 3-44, 3-45, 3-46

IPC

backup 3-55

job selection 3-53, 3-54

list information 5-5

print 5-24

reorganization 3-57

update 5-12

mass

delete processing 5-19

generate processing 5-20

restore 5-21

update processing 5-22

member backup 3-68

primary selection menu 2-3, 2-5

profile update 3-5, 3-8, 3-9

queue manager 2-21

recovery selection 3-37

restore criteria 5-6, 5-7

RSVP

boolean selection 2-35

data set selection 2-28, 2-34

dialog parameters 2-26

primary input source 2-27

primary selection 2-24

primary selection menu 2-33

queue ASM2 command 2-31

report format 2-29, 2-36

transaction file 2-30

user exits 2-32

VSAM selection 2-32

sort processing 5-25

space list 3-73

special definitions 3-25

Panel descriptions (*continued*)

tape optimization 3-47

tape statistics 3-65, 3-67

VSAM exceptions 3-31

VSAM statistics 3-70

Panel L1AAP022 3-8

Partitioned data set

See PDS

Path names 4-6, 4-16

Pattern masking

catalog entries 2-19

prefix 2-22, 2-23

RSVP data set selection 2-34

RSVP facility 3-29

RSVP keywords 2-27

PDM reload 4-12

PDS

compressing 2-15, 2-16

default name 3-32, 3-35

directory

blocks 4-12

size 2-16

DSORG 5-6

target 5-6

unload version 4-37

volser 2-16

PDS directory blocks

field description 4-12

PDSAA alias 5-7

Percent save

field description 2-16

Permanent archive

field description 2-8

Permanent archives

field description 2-19

PF keys 2-3

PO data sets 2-25, 4-12

Popup panels 3-6

Prefix

CA-ASM2 data sets 5-16

profile

See Profile

TSO 2-17, 2-19

VSAM 4-7

PRG1

field description 3-6

users 3-5, 5-8, 5-11

PRG1 users 3-5

PRG2

field description 3-6

PRG3
 field description 3-6
Primary
 field description 2-16
Primary option menu
 ISPF 6-6
Primary selection menu 2-3
Primary volume
 field description 4-24
Print
 class 5-24
 display 5-14
 fields 2-22
 IPC 5-24
 tape list 5-27
Print fields
 field description 2-22
PROCLIB 3-69
Product changes 1-1
PROF mass command 5-24
Profile
 prefixing 2-8, 2-11, 2-14, 4-3
 TSO 2-14, 4-3
 update
 description 3-4
 field descriptions 3-8
Profile update
 field description 2-42
PROG authority 3-5
PRT mass command 3-51, 5-24
Pseudo volser 4-20, 5-5

Q

Q line command 5-7
Qualifier
 field description 2-16
Qualifier to add to DSN
 field description 2-9, 2-12
Qualify
 field description 2-22
QUALnb
 field description 5-9
Queue manager
 description 2-21
 operands 2-21
 panel 2-21
 reload commands 2-23
 unload commands 2-22
Queue name
 field description 2-22

Queuing data sets 2-7, 2-11

R

R
 field description 3-23
R line command 5-8
RASS field B-3
Ratio
 field description 3-67
Recovery
 incremental
 See Incremental recovery
 jobs 2-38, 2-43, 3-18, 3-43, 3-46
 panel description 3-53
Recovery selection
 field description 3-37
Region size 2-3
Relabel field 3-42
Relabel your NEWVOL
 field description 3-42
RELDATE
 field description 3-24
Release
 field description 2-15
 parameters 2-15
 unused space 2-13, 2-15
Releasing unused space 2-17
Reload
 example 6-12
 exit \$RELDEXT 2-8
 parameters 2-9, 2-12
 security 3-52
 user options 3-52
Reload exit \$RELDEXT 2-11
RENVDS
 field description 3-42
RENVTOCIX
 field description 3-42
Reorganization of IPC 3-57
Report format
 keywords 2-26
 panel 2-29
Reporting panel 3-53
Restore
 criteria 5-7, 5-9
 example 6-2, 6-7
 full-volume 6-42
 group 5-2, 5-4
 IPC
 from version -1 3-56
 from version 0 3-56

Restore (*continued*)
 IPC (*continued*)
 with import 3-56
 with repro 3-56
 member backup example 6-39
Retention days
 field description 2-8, 2-12
Retention period
 changing 5-12, 5-22
 default 2-7
 expired
 listing 2-19
 on tape 3-24
 threshold 2-8
RETPD
 field description 2-22, 3-24, 3-69
REXX
 customized 3-72
 procedure 3-47, 3-59
RF field B-3
RLD cell 4-34
RORV field B-3
Row nn of nn
 field description 3-23
RQAL field 5-11, B-3
RQNB field 5-11, B-3
RSPRINT JCL 2-27
RSVP
 boolean selection 2-28
 data set selection 2-28, 2-34
 description 2-24
 dialog parameters 2-26
 panel 2-26
 pattern masking facility 3-29
 primary
 input source 2-27
 selection menu 2-24
 selection panel 2-33
 queue ASM2 command panel 2-31
 report format panel 2-29
 sample panels 3-65
 saved commands table 2-25
 selection
 panel 2-35
 selection panel 2-32
 transaction file 2-30
 user exits panel 2-31
 VSAM selection panel 2-32
RVSN field B-3

S

S line command 3-67, 5-9
Samples
 \$RSVP command 2-33
 edit macro 2-26
 RSVP sample panels 3-65
 RSVP saved commands table 2-25
Save
 field description 2-16
Saved command table
 cluster name 2-26
 displaying 2-25
 panel variables 2-27
 panels 2-25
Scheduling solution 3-49, 3-51, 3-55, 3-60
Scratch commands 3-64
Screen descriptions
 See Panel descriptions
Screens
 See Panel descriptions
Secondary
 field description 2-16
Security
 reload 3-52
Session
 dialog 2-26
Show member backup P022
 field description 3-8
Show panel L1AAP022 3-8
Show standard heading
 field description 2-19
Simulate
 field description 3-58
SMS
 cells 4-35
 database 2-27
 field description 3-74, 3-75
Sort
 display 3-75, 5-14
 field description 3-11, 3-13, 3-17, 3-19, 3-21
 fields 2-21, 2-22, 2-29
 ISPF table 3-46
 option 3-11, 3-19
 options 3-51
 processing 5-25
 SRT command 3-22
Sort fields
 field description 2-22
Space (cyl)
 field description 3-54

- Space allocation 2-13
- Space calculation
 - field description 3-5
- Space list 3-73
- Space management 2-13, 2-14
- Space map
 - See* Volume
- Spanish language display 2-4
- Special definitions 6-28
- Splits
 - See* VSAM
- SRT mass command 5-25
- Staging area 2-7, 4-26
- Statist
 - field description 3-69
- Statistics
 - IPC 3-53, 3-70
 - ISPF 3-69
 - tape 3-66
 - VSAM 3-70
- Status
 - field description 3-50, 4-24
- SUBCA7 command A-1
- Submit JCL
 - edit mode 2-38
 - forward merge 3-67
 - full restore 3-42
 - full-volume restore 3-42
 - IPC reorganization 3-57
 - restore job 3-6
 - tape optimization 3-47
- Submit to CA-7
 - field description 3-8
- SUBSYSTEM
 - field description 2-23
- Suffix selection 3-52
- SWDAT field B-3
- Swedish language display 2-4
- SWUND field B-3
- SYS1.VTOC.Vvolser file 3-50
- SYSID
 - field description 3-21
- SYSOUT
 - field description 2-16
- SYST
 - authority 3-6, 3-72, 5-11
 - field description 3-6
- System ident
 - field description 4-4, 4-24
- System-initiated
 - archiving 2-7

- System-initiated (*continued*)
 - backup 2-11
- SYSUT file 3-38

T

- T
 - field description 3-23
- Table
 - action messages 2-26
 - check 3-5
 - ISPF 3-21, 3-26, 3-46
 - saved command 2-24, 2-25, 2-26, 2-27
 - variables B-1
- Tape
 - copy viewing 4-28
 - list 3-63
 - optimization 3-37, 6-42
 - statistics 3-66
- Tape - disk
 - field description 3-54
- Tape check
 - field description 3-58
- Tape check output
 - general results 3-62
 - LOXXX check 3-61
 - test 1 3-63
 - test 2 3-63
 - test 3 3-64
 - test 4 3-64
 - test 5 3-65
 - test 6 3-65
- Tape data set
 - field description 2-14
- Tape dsname
 - field description 4-7, 4-17
- Tape Mgt.
 - field description 3-60
- Tape optimization 3-43, 3-47, 6-52
- Tape statistics 3-67
- TAPESEQ
 - field description 3-24
- Tapevol
 - field description 3-16, 3-20, 3-24
- Target volume
 - field description 2-9, 2-12
- Terminal - TSO 2-3
- TIME
 - field description 2-23, 3-23
- TLMSVMF 2-27

To
 field description 3-21
To specify an alternate IPC
 field description 4-1
Total # of restore jobs
 field description 3-7
TOTTRK
 field description 3-74, 3-75
Transaction file 2-30
TRKFR
 field description 3-75
TRKFREE
 field description 3-74
TRKS
 field description 3-24
TRKS/CYLS
 field description 2-16
TSO
 ALLOC 2-27
 conventions 2-8, 2-11
 logon 2-3
 logon region size 2-3
 naming conventions 2-13, 2-15
 prefix 2-17, 2-19
 profile 2-14
 profile prefixing 2-8, 2-11, 2-14, 4-3
 terminal 2-3
 userid 2-14, 2-25, A-3
 volume report 2-25
Type
 field description 2-22, 3-12, 3-16, 3-18, 3-20, 3-27,
 3-74, 3-75
TYX field B-4
TYXF key field B-2, B-4

U

U line command 5-12
UDC cell 4-7, 4-17
Uncatalog
 archive utility 2-6
 device type 2-16
 reload 2-9, 2-12
Undelete
 job 3-6
Undelete
 automatic option 2-38
 commands 4-4
 field description 2-20
 file in delete status 5-3
 file version 5-2

Undelete (*continued*)
 files in logical delete status 5-21, 5-22
 line command U 5-3
 logically deleted entry 2-18
 request 5-26
 retention period change 5-12
 SWUND field B-3
 update 5-3
Unit
 field description 2-16, 2-22, 3-41
UNLD date
 field description 4-24
UNLD time
 field description 4-24
UNLD type
 field description 4-24
Unload
 See Catalog
Unused space
 releasing 2-13, 2-15, 2-17
 report 2-36
 saving 2-16
UPC cell 4-9, 4-19
Update
 \$DEFRAG volume record update 4-32
 application table 3-26, 3-29
 buffer space 3-34
 CA-3 4-36
 CA-6 4-37
 catalog 2-18, 2-44
 catalog utility 4-1, 4-23, 4-30
 COM cell 4-38
 comment field 5-2
 data sets open for 2-11
 eligible for restore 2-38
 IPC 2-4, 2-44, 4-1, 4-12, 5-12
 ISPF stats 3-68
 IXR cell 4-33
 line command U 5-3
 mass commands 5-22
 mode 3-28
 parameters 2-20
 processing 5-22, 5-26
 profile 2-42, 3-4, 3-5, 3-8, 3-9, 3-72, 5-24
 field descriptions 3-5
 retention period 5-2, 5-3
 RLD cell 4-34
 scratch 3-64
 SMS cell 4-35
 table move 6-20, 6-32
 time and date 2-14

Update (*continued*)
 times and dates 3-26, 3-31
 UPC cell 4-9, 4-19
 usage data 2-14
 verify 3-29
Update IPC 5-12
Update/Delete online
 field description 3-5
Usage data 2-14, 3-70
Use origvol
 field description 3-5
Use popup panels
 field description 3-6
User
 applications 3-1
 options reload 3-52
User CSECT 2-31
User interface benefits 2-38, 2-39
User-initiated archive 2-7
Userid
 field description 2-23
 TSO 2-14, 2-25, A-3
Utilities
 \$COPYTP 3-64
 archive 2-6, 2-7
 backup 2-10
 catalog update 2-44, 4-1, 4-23, 4-30
 disk space management 2-13
 ISPF browse 2-24
 ISPF hardcopy 2-27
Utilization - current 3-70
UVC cell 4-11, 4-21
UVCV 4-12

V

Validate data set exists
 field description 2-8, 2-12
Verbose
 field description 3-60
VERS
 field description 3-23
Version
 field description 3-10, 3-13, 3-17, 3-19, 3-21
View
 data with browse mode 2-26
 IPC fields 2-44, 4-1
 RSVP panels 2-26
 selected files 6-5, 6-15
 sequential data set 4-23
 tape copy 4-28

View (*continued*)
 valid application names 6-21
Volser
 field description 3-18, 3-20, 3-50, 3-54
Volume
 allocation 4-12
 field description 2-16, 2-22, 3-39, 3-68
 records
 accessing 4-30
 overview 4-30
 selecting 4-30
 table 4-31
 update 4-32
 space map
 description 3-73
 online volume list 3-74
 online volumes space map 3-75
 TSO report 2-25
 unload 4-31
Volume n bytes
 field description 4-7
VSAM
 alternate index
 ASO cell 4-16
 cell list 4-15
 selecting 4-13
 UDC cell 4-17
 UPC cell 4-19
 UVC cell 4-21
 viewing 4-13
 base cluster
 ASO cell 4-6
 cell list 4-5
 selecting 4-3
 UDC cell 4-7
 UPC cell 4-9
 UVC cell 4-11
 cluster 4-3
 defining - example 6-28
 definitions 3-25
 exceptions 3-31
 table definition 3-30
 field description 2-22
 MSS 2-22
 objects 2-32
 restore example 6-33
 restore time 3-30
 splits 3-55, 3-57
 statistics 3-70
VSAM exceptions
 field description 3-25

VSAM exceptions (*continued*)

table definition 3-30

VSAM table check

field description 3-5

VSAMASSOC

field description 2-22

VSS field B-3

W

Workfile prefix

field description 3-8

X

X line command 5-13

Y

YOPT field B-3

YTYPE field B-3